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USSR Report

ECONOMIC AFFAIRS

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INDICATORS OF THE TECHNICAL LEVEL OF PRODUCTION DISCUSSED

Moscow EKONOMICHESKAYA GAZETA in Russian No 46, Nov 79 p 4

[Article by K. Yefimov, Chief of a Department of the USSR Gosplan: "Improving the Economic Mechanism: Indicators of the Technical Level of Production"]

[Text] The thorough consideration of the achievements of science and technology in plans for the economic and social development is one of the important trends in improving planning.

The results of carrying out scientific-technical measures are now becoming basic in all sections of the national economic plan. Assignments for the growth in product of highest quality and other indicators, for example, are most important in the section of the plan that deals with production; and the assignments for reducing the use of manual labor are crucial to the section that deals with labor and social development. In turn, such new indicators in the state plan for the adoption of science and technology as the assimilation and adoption of new technological processes and product at newly introduced enterprises and construction projects are mandatory assignments when building new or expanding and reconstructing existing enterprises; these indicators are taken into consideration in the indicators for capital construction.

In Optimal Quantities

The significance of comprehensive target scientific-technical programs, which must be completed by the organization of the new facilities, is increasing. We, therefore, are speaking about the adoption of the results of research and design work in optimal quantities; we are not discussing the checking of scientific and technical solutions at head construction projects as is taking place in scientific-technical programs underway in the Tenth Five-Year Plan. An approved indicator of the efficiency resulting from the adoption of scientific-technical measures is being introduced.

The indicators of the technical level of production and of the product that is being manufactured are becoming most important. Their subsequent utilization in the practice of planning the adoption of science and technology

is a necessary condition for achieving the greatest final social and economic results from the use of the achievements of science and technology.

Such indicators were first used in the present five-year plan; however, they still are not sufficiently impacting upon the technical level of production and upon the efficiency of the steps being taken. Therefore, the decisions of the Party and government are being directed at improving the system of indicators in a way that would make it possible to influence the basic trends for raising the technical level of production. These indicators must first of all determine the qualitative structure of the product that is being turned out, the growth of the percentage of progressive types of product and also the improvement in the economical aspects of using the product. It is equally important to ensure the improvement of the technical base of the branches or production facilities, an improvement in the use of equipment, raising the level of production mechanization and automation, and extending the use of basically new and progressive technological processes. And finally, the indicators must effectively influence a lowering of the consumption of materials in production.

In machine-tool building, for example, it is important to change the proportions between the output of metal cutting equipment and equipment for processing by pressure for the good of the latter. This makes it possible to manufacture articles that are quite similar in assigned form and sizes, and in many cases that are identical. The quantities that are established by the plan for production of technical means must provide for the fulfillment of assignments for raising the coefficient of metal utilization, which, commencing with the plan for 1980, will become one of the basic indicators of technical level of production in the machine building ministries. This indicator along with the improvement in the designs significantly influences the consumption of metal in production.

When planning the structure for the production of metal cutting equipment it is important to make provision for the optimal percentage of special and modular machine tools with numerical programmed control, of machine tools of the processing center type, of robot-manipulators, and automatic and semi-automatic production lines. In the plan's indicators it is necessary to reflect the production of equipment for basically new technological processes: assemblies for plasmomechanical, laser, electrochemical and other kinds of processing, which make it possible to sharply increase labor productivity, and new kinds of vibration equipment. At the Production Association Izhorskiy Zavod, for example, on one of the lathes when processing ingots of high-alloy metal using plasmomechanical assemblies labor productivity was increased 4-fold. A significant national economic impact will be obtained when this method is widely adopted.

Assignments for improving the generalizing quality indicators are important for raising the technical level of production. Among these indicators are: the average life of tires, the average grade of cement, the average work resource of diesels by group, the production of diesel fuels containing .2 sulfur and less, the average content of iron in commercial ore, and the nutrient properties in mineral fertilizers.

The group of indicators for raising the level of the technical base and the use of equipment characterizes the adoption of optimal individual capacities of equipment and the extent of the output of a unit of capacity. Similar indicators are already being used in planning. For example, assignments have been established for increasing product output on machine units and assemblies with a large individual capacity. Such equipment makes it possible to significantly raise labor productivity, as a rule, in proportion to the increase in capacity of the machine units, to lower the cost of a unit of capacity of the equipment by 5 to 15 per cent and the relative consumption of metal by 7 to 10 per cent.

Planned assignments for expanding the use of basically new and progressive technological processes and also for raising the levels of mechanization and automation of production put the adoption of the achievements of science and technology in the field of production technology under the control of management at all levels. It is important that the scope of their use be coordinated with deliveries of equipment and other resources. In ferrous metallurgy, for example, they have introduced indicators for progressive ways to extract iron ore - the open-cut mining using cyclic-flow technology and the sub-surface mining using self-propelled machines and vibration technology; indicators of the amount of efficient technology for smelting steel in converters with a capacity of 300 tons and more and the pouring of steel using the continuous method. In non-ferrous metallurgy they are establishing an indicator for developing deposits of non-ferrous metal ores by the open-cut mining method using powerful water-filled and granulated explosive substances with the comprehensive mechanization of the process of charging wells.

There is apparently no need to characterize in detail all groups of indicators of the technical level of production. Their value is sufficiently plain in the cited examples. The system of indicators of the technical level of production and product that is manufactured makes it possible to reliably coordinate the planning of science and technology with the other sections of the plan - production, capital construction, for labor and social development, production cost and profit, for raising the efficiency of public production; this can be done when production is sufficiently complete and when proper consideration has been given to the specific nature of the branches and production facilities.

Evaluation of the Technical Level

A series of organizational steps and steps for raising the economic motivation are to be carried out; these steps are aimed at providing a high technical level of production and product that is manufactured. Toward this end the State Committee for Science and Technology of the USSR Council of Ministers and the ministries in 1979-1980 are evaluating the level of the technical means that are being manufactured for production purposes; the evaluation will later become systematized.

A mandatory extra-departmental commission of experts is being formed that will have jurisdiction over technical-economic indicators of particularly important kinds of products that is being created and technological processes, commencing with technical assignments and concluding with final results. The primary organizations are being determined for state testing of the most important kinds of product to be used for production and technical purposes and for cultural and domestic use. All of this is to provide a high technical and economic level of new designs and to raise the responsibility of the collectives for the quality of the new equipment.

The completion in the next 2 to 3 years of the formation of production associations as the basic link of industry will undoubtedly speed up the rates of technical re-outfitting. For the large economic units have great potential for improving the specialization and organization on co-operative lines of production and the allocation of the necessary resources. The experience of such large production associations as Uralmash, AvtoZIL, Kirvoskiy Zavod, LOMO and others shows that in these complexes the organizational merger of science and production is accomplished much more fully. This is because in large associations they have comprehensive scientific-technical, planning and design and technological subelements which use modern equipment, means of automation, instruments and computers, and which perform necessary experiments and tests and are engaged in working on manufactured articles and technological processes in industrial conditions.

Speeding up the transfer of scientific-research, design, technological and other organizations, experimental enterprises, scientific-production and production associations, the enterprises of the industrial ministries to a system of cost accounting in organizing work to create, assimilate and adopt new technology based on orders or contracts is an important measure. The basis of this system is final results: the adoption of work and the achieved national economic effect, from which funds for economic stimulation will be created. One cannot lessen the importance of taking into consideration in the total amount of product the cost of work (including average profit of an industrial nature) for the assimilation and adoption of new equipment that is incurred at the expense of the means of the unified fund for the development of science and technology. This procedure creates a motivation for the associations and enterprises to rapidly carry out work for the new equipment.

The surcharges added to the wholesale price for new highly-efficient product of an industrial-technical nature that have been regulated by the decree must operate efficiently. The association (enterprise) has 85 per cent of the assets obtained from the surcharge remaining at its disposal. Moreover, surcharges are not taken into consideration in the plan, but the evaluation of plan fulfillment does consider the surcharges.

By keeping the level of wholesale prices unchanged throughout the five-year plan by using inexpensive materials in comparison with those that are being used in production, the contradiction between the desire of the collectives to lower the expenditure of resources and the volume plan indicators is eliminated.

In drawing up the draft plan for 1980 the realization of several provisions of the decree of the CPSU Central Committee and the USSR Council of Ministers has already gotten underway; these provisions concern the indicators of the technical level of production and the product that is manufactured. By raising the technical level of production in the current five-year plan at existing industrial enterprises an approximately three-fourths reduction in production cost of product must be obtained. The adoption of new equipment in optimal quantities makes it possible to increase the amount of savings. It is important that the ministries now work diligently to improve the system of indicators of the technological level of production, while subsequently making the system a reality.

8927

CS0: 1820

NEED TO REDUCE CONSUMPTION OF MATERIALS IN PRODUCTION CITED

Moscow EKONOMICHESKAYA GAZETA in Russian No 46, Nov 79 p 4

[Article by S. Ye. Krylov, Secretary of the Vo'gograd Oblast Party Committee: "Party Management of the Economy - Experience in Lowering Consumption of Materials"]

[Text] Under the present volumes of industrial product that is being manufactured, the lowering of the consumption of materials in manufactured articles represents a large reserve for raising the efficiency of production. A decrease in material expenditures by one percent for our oblast alone provides a savings of several tens of millions of rubles. This is why the oblast Party committee is encouraging communists and all workers to seek reserves for conserving expenditures of raw materials, basic and auxiliary materials, semi-manufactures and other material resources.

Taking Increased Demands Into Consideration

The Party and the government are showing great concern about lowering material expenditures for production. This has been reflected in the decree of the CPSU Central Committee and the USSR Council of Ministers, "Concerning the improvement of planning and strengthening the influence of the economic mechanism upon raising production efficiency and quality of work." Taking the increasing demands into consideration, the oblast committee, the city committees, the rayon committees and the primary Party organizations are strengthening their organizational and mass-political work in mobilizing communists and all workers to raise production efficiency at each enterprise by lowering the consumption of materials in manufactured articles, which is accomplished by adopting new equipment and technology and proposals for improving production methods. These matters have been examined in offices of the Oblast Party Committee, at Party activists in production organizations and at scientific-practical conferences. They were the subject of discussion at Party and worker meetings of enterprises and at sessions of the Party committees and plant trade union committees. During the course of the oblast competitive inspection of the use of raw materials, materials and fuel and energy resources that is now being conducted in enterprises and organizations of the oblast, approximately 3,000 measures were developed. The realization of these measures provides for a significant economic impact.

At the Volga pipe plant, for example, with the active support of the Party committee, the production of thin-walled, spiral-seam pipes for general use that are made of a low-alloy steel has been developed and assimilated in a cooperative effort with the scientists of several institutes. With an identical strength quality, the wall thickness of the pipe, which is welded from thin-walled pipes, is 30 to 33 per cent less than for pipes made out of a carbon steel. On a yearly basis this saves 85,000 tons of metal. The plant has assimilated a technology for producing pipes for gas and oil pipelines that have been thermo-hardened. This technology has made it possible to decrease the thickness of pipe walls by 10 to 12 per cent with no loss in performance standards; it has also made it possible to save another 25,000 tons of metal each year.

The Volgograd Petroleum Machine Building Association is working actively to lower the amount of materials that are consumed in production. Up to 650 proposals for improving production methods are adopted every year at the association; approximately a third of the proposals are connected with saving metal. The association is constantly seeking ways to reduce the weight of the equipment that it manufactures. Here is an example. Last year the association received an order to manufacture an absorber for the Mubarekskiy gas refinery. The weight of such an absorber is usually 315 tons and it has a diameter of 3.4 meters. The association's designers designed an apparatus with smaller dimensions but with the same working parameters. In this way they conserved 75 tons of metal. In three years of the Tenth Five-Year Plan the Volgograd Petroleum Machine Building Association conserved 4,237 tons of metal, of which 856 tons were in excess of the established assignment.

At the Volgograd Medical Equipment Plant plastics are being extensively substituted for metal. There is scarcely an article that is manufactured here that does not have polymers in it. Each year the plant assimilates no less than 50 designations of articles made of plastic. The use of plastics conserves metal and significantly reduces labor expenditures.

Many such examples could be given. However, it must be admitted that the work at some enterprises in discovering reserves for conserving metal is still not well planned. The oblast machine building and processing enterprises on the whole conserved less metal in 1976 - 1978 than was planned. At some enterprises in the oblast up to 30 to 35 per cent of metal is wasted in shavings; and there are other losses as well.

At the Kamyshin Crane Plant, for example, they did not fulfill the assignment for reducing the norms of metal expenditure per unit of article. During the past two years the expenditure of metal has even increased as compared to 1976. The problems of lowering the consumption of materials are very rarely examined here by the Party organization and are not brought up for general discussion.

On the Basis of Contracts

The Decree of the CPSU Central Committee and the USSR Council of Ministers calls for the completion in 1980 of the transfer of scientific-research, design, planning and design and technological organizations, experimental enterprises, scientific-production and production associations (enterprises), and industrial ministries to a cost-accounting system for organizing work to create, assimilate and adopt new technology on the basis of contracts. Our oblast has experience in this work. This experience acquires even greater significance in connection with the fact that according to this Decree the enterprises and associations in the five-year plans will be assigned tasks to develop, assimilate and adopt new, highly efficient technological processes and types of product and to fulfill scientific-technical programs and also to adopt leading innovations in the field of technology, the scientific organization of labor, production and management.

The collectives of the Volgograd Scientific-Research Institute for Machine Building Technology and the Volgograd Production Association for Tractor Parts and Standards have been collaborating for five years on a contract basis. Every year they conclude contracts for the development and adoption of innovations in the shops of the association. They jointly compile a comprehensive plan of work which plans measures to be taken, indicates who is responsible for what, determines the time periods for completing design work and the anticipated economic effect.

For this year the plan calls for the carrying out of 21 measures. In order to better manage the design work 20 creative brigades were established; the brigades are comprised of specialists from the lead plant and from the scientific-research institute. Progress in accomplishing the plan is regularly discussed at joint sessions of representatives of the association, the institute, the association's Party committee and communists from the institute. Such an approach to business yields a high return.

On the basis of contracts, which were reached between the Volga Pipe Plant, Giprovez All-Union Institute for Designing Metallurgical Plants and the Surgut Pipeline Construction Trust, several innovations have been adopted which make it possible to raise the quality of pipes and to save a lot of metal in manufacturing them.

The experience that has been gained will be used extensively by the oblast Party Committee in the process of adopting the cost-accounting system for organizing work to create, assimilate and adopt new technology on the basis of orders (contracts).

The Impact of External Factors

Experience shows that you cannot underestimate the role of external factors that do not depend upon the enterprises; these factors have a negative effect upon lowering the consumption of materials, while the labor collectives

are powerless to offset them. The annual over-expenditure of rolled metal caused by deliveries with deviations from orders at machine building and metal processing enterprises in our oblast amounts to approximately two per cent. Thus, there is a significant over-expenditure at the Kamyslin Crane Plant, the Volga Steel Constructions Plant and at several other enterprises.

An inadequate assortment of ferrous metals at metal supply bases leads to frequent substituting of profiles. The managers of the Nizhne-Volzhskiy rayon material-technical supply administration are not always justified in switching consumers to a transit form of supply. Specialists have determined that this form is economically feasible when in volume the warehouse supply of metal satisfies no less than 30 per cent of its total consumption. In our oblast such supply amounts to only 6.8 per cent. For this reason the consumers are unable to obtain a metal profile that they need on a timely basis and are forced to accept various substitutions. The raising of the responsibility of the supply and sales organizations to deliver necessary resources to consumers in an assigned amount and variety will be very important.

The abolition of the procedure, whereby the output of equipment is planned in tons, will lead to a lowering in the consumption of materials. At the Volgograd Petroleum Machine Building Association they are constantly struggling to lower the consumption of materials in manufactured articles and to conserve rolled ferrous metals. The ministry's assignments to lower norms of metal expenditure are always overfulfilled. But since the production of petroleum equipment is planned in tons, the plant often is among those who do not fulfill their production plan. In the oblast's labor collectives they approved the decision that the substitution of some materials with others less expensive would be stimulated materially.

As we see, all conditions have been created to lower the consumption of materials; the Party organizations must now urgently work on the practical implementation of the measures of the Party and government to improve the economic mechanism.

8927
CSO: 1820

STATUTE ON THE PASSPORT OF A PRODUCTION ASSOCIATION (ENTERPRISE)

Moscow EKONOMICHESKAYA GAZETA in Russian No 46, Nov 79 pp 9-16

Article: "New Official Materials: Statute on the Passport of a Production Association (Enterprise) As Approved by the USSR State Committee for Science and Technology, USSR Gosplan, the USSR Central Statistics Administration, the USSR State Committee for Standards and the USSR State Committee for Construction Affairs on 4 October 1979"

Text The decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 "Concerning the improvement of planning and strengthening the influence of the economic mechanism upon raising the efficiency of production and the quality of work" called for the compilation of a passport for each production association (enterprise); a follow-up decree called for amplification of the first.

To execute this decree this Statute on the passport of a production association (enterprise) has been prepared.

The Statute is common to all ministries and associations (enterprises) of all branches of industry and the construction industry.

Procedure for Filling Out the Passport

1. The ministries and departments provide for the compilation of the passport in 1979 - 1980 for each association (enterprise); in the following year the passport is defined more precisely on a yearly basis. For new associations the passport is drawn up at the same time that their organization is drawn up.
2. The passport of a production association (enterprise) must be compiled using documented data and must show:

- availability and use of production capacities;
- the organizational-technical level and production specialization;
- the quality of the product that is manufactured;
- other technical-economic indicators required for drawing up five-year and annual plans.

3. The passport is compiled by the production associations^{*} and enterprises to which the Statute concerning the socialist state production enterprise (referred to in the rest of this document as an association) is extended no later than ten days after the annual accounting of the superior organization is handed over.

4. Responsibility for the reliability of the data and the timely insertion of the amplifications is borne by the manager of the association.

The completed passport is signed by the manager of the association.

5. The passport data must correspond to bookkeeping and statistical accountability. If corrections (changes) are properly inserted into bookkeeping and statistical accounts, the appropriate corrections (changes) must be inserted in the passport indicators.

Planned (or estimated) and actual data for the reporting period are cited in the passport. In some forms projected (planned) data is also cited.

Passport indicators are defined in accordance with existing standard regulations on planning and accounting.

6. The passport is compiled on standard forms, which are attached to this Statute.

When necessary the ministries may include in the standard passport forms additional indicators which show the specific nature of the appropriate sector (association).

7. The passport is a strict accounting document which is retained in the archives of the production association. When necessary the passport or individual forms can be attributed to control documents.

8. A copy of the passport or individual sections of the passport (or forms) are sent to a superior branch organ and territorial planning and statistical organs upon demand.

9. Changes and additions to this statute are done by the USSR State Committee for Science and Technology, USSR Gosplan, the USSR Central Statistical

^{*} Scientific-production, agro-industrial associations compile their passports according to a common system that was established for industry with the addition of basic indicators for different kinds of activity.

Administration, the USSR State Committee for Standards and the USSR State Committee for Construction Affairs in accordance with recommendations from the ministries and departments according to amount of experience that has been gained in using the passport in planning the development of industry as a branch of the national economy.

The passport will contain the following data.

Section 1. General Data on the Association

1.1. Designator, subordination, year of founding, year that latest reconstruction was completed or the year that uncompleted reconstruction was started (indicate "not completed"), last name, first name and patronymic of the manager. Telephone number for information, the telex and teletype numbers.

1.2. The composition and location of the association and its production units at the end of the reporting year.

1.3. Bank and transport requisition numbers of the association and the organizations that are a part of the association.

The standard forms of this section are 1.1 and 1.2.

Section 2. Production Capacity

2.1. The production capacity of the association (average for the year and at the end of the year) in units of measurement accepted for the association (items, tons, etc., in thousands of rubles).

2.2. The indicators of the use of production capacities and equipment:

- the use of annual average production capacity (in percentage);
- machine shift coefficient on the whole for the association and for individual kinds of equipment;
- the equipment workload coefficient on the whole for the association and for individual kinds of equipment.

2.3. Associations, which assimilate planned capacities, along with the indicator of planned capacity should indicate:

- norms and actual amount of time required for assimilating planned capacity (in months);
- amount of production (processing or extraction of raw materials) of product in percentage of annual planned capacity;
- product output estimated from assimilation norms and the actual product output;

-level of assimilation of planned capacity (in percentage).

The standard forms of this section are 2.1, 2.2 and 2.3.

Section 3. Production of Product

3.1. The output of basic kinds of product (by groups) in physical terms, including product for export:

-approved by superior organizations;

-approved by the association.

Information on consumer goods is provided in a group assortment, including goods for children.

The amount of product output in a cost expression (net (standard) product or another indicator of product volume that has been established for the branch).

The amount of product sales taking into consideration the fulfillment of pledges for deliveries; amount of sales in wholesale prices accepted in the plan.

The smoothness of production.

3.2. Kinds of specialized product and its percentage of the total volume of output (according to net (standard) product or another indicator of product volume that has been established for the branch). The percentage of assembly articles, semi-manufactures and half-finished products that are obtained elsewhere in the total product that is manufactured (commodity product).

3.3. The labor-intensiveness of manufacturing a unit (according to basic kinds of product).

3.4. The percentage of product with highest category of quality in the total output (according to net (standard) product or another indicator of product volume established for the branch). The percentage of product of first and second category of quality. Other indicators of product quality that have been established for the branch. The percentage of product that is manufactured according to state standards.

The qualitative characteristics of the basic kinds of product that is manufactured (reliability, service life, productivity, average content of nutrients in fertilizers, average grade of cement, average content of iron in commercial ore, ecological indicators and others).

3.5. List of product (basic kinds) assimilated for the first time by the association, the level of standardization of manufactured articles and assemblies in the product and a list of product taken out of production.

The standard forms of this section are 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 and 3.7.

Section 4. Fixed Assets and Capital Construction

4.1. Value of fixed assets, including industrial-production fixed assets: total, including - buildings, installations, machinery and equipment (average for the year and at the end of the year).

4.2. Amount of technological equipment in the basic and auxiliary shops (at the end of the year), separately for each kind (metal-cutting, wood processing, forging, casting, weaving, dyeing, thermal, etc.).

When necessary a list of equipment and means of measuring along with their characteristics is attached to the passport according to a decision of the ministries.

4.3. The annual amount of capital investments, including construction and installation work, and which of these were carried out using the organization's own resources.

4.4. The introduction of fixed industrial-production assets, production capacities and construction projects, including a growth in capacities from technical re-outfitting and reconstruction.

4.5. Amount of incompleated construction (at the end of the year).

4.6. Output-capital ratio, labor-capital ratio and relative capital investments per ruble of growth in product according to net (standard) product or another indicator of product volume established for the branch, per unit of actually introduced production capacity.

4.7. Estimated cost of new construction, reconstruction and expansion of projects for production purposes, including the amount assimilated since the start of the construction (as of the end of the year).

The standard forms of this section are 4.1, 4.2, 4.3 and 4.4.

Section 5. Material resources

5.1. Total amounts of required raw materials, materials, semi-manufactures, (assembly articles), fuel, thermal and electric power in a physical terms.

5.2. Assignments for the average lowering of norms of expenditure, considering pledges in the counter plan, of basic kinds of raw materials, materials, fuel, thermal and electric power and their actual fulfillment (in percentage in an increasing total to the standards of the base year (preceding the start of the five-year period) and to the standards of expenditure in the preceding year).

5.3. Norms and actual expenditure of basic kinds of raw materials, materials, fuel, thermal and electric power per unit of manufactured articles (or work) of the basic product list or for a group of manufactured articles (work).

5.4. Total amounts of actual waste and losses of raw materials, materials, fuel and thermal power in a cost expression. Percentage of waste and losses in the total amount of required raw materials, materials, fuel and thermal power. The coefficient of extraction of product from basic raw materials.

5.5. Percentage of used waste of the total waste, including waste material transferred to other enterprises.

Percentage of by-products and secondary power resources that is used.

5.6. Cost of raw materials, materials and assembly articles per ruble of net (standard) product or another indicator of product volume established for the branch.

The standard forms of this section are 5.1, 5.2, 5.3, and 5.4.

Section 6. Labor Resources and Social Development

6.1. The average number of required workers, including industrial-production personnel, including total number of workers. The number of workers at the end of the year separately for the basic and auxiliary shops. The number of workers at the end of the year performing work: using machines and mechanisms; to keep watch over the operation of automatic equipment; doing manual labor with machines and mechanisms, including those engaged in heavy labor, and including women.

The coefficient of worker turnover.

The number of workers in management at the end of the year.

6.2. Labor productivity per worker (according to net (standard) product or another indicator of product volume established for the branch) in physical terms (extraction of oil, coal, gas per worker, the comprehensive output per worker at lumbering work, output of pig-iron, steel, rolled metal per worker and other physical indicators accepted for the branch).
Growth in labor productivity

6.3. Losses of work time of workers in man-days and in percentage to the calendar fund of work time due to unauthorized absences, day-long and intra-workshift shut downs and absences approved by the administration. Overtime work and work on days off and holidays.

6.4. Average percentage of fulfillment of norms of output by pieceworkers. Percentage of workers working according to technically justified norms.

6.5. Wage fund for all personnel, including industrial-production personnel.

Average monthly wage of a worker of industrial-production personnel, including the common worker. Growth in average wage.

The standard of wage per ruble of net (standard) product or another indicator established for the branch.

6.6. Provision of the enterprise's workers with living space and preschool childrens' institutions (percentage).

6.7. Size of the funds for material incentive and the fund for social and cultural activities and housing construction per worker.

The standard forms for this section are 6.1, 6.2 and 6.3.

Section 7. Financial Indicators.

7.1. The sum of the balanced profit and profit from sales of commercial product (in some branches the lowering of the production cost). The profitability both as a ratio of profit to cost of basic production funds and standardized turnover assets and as a ratio of profit to the complete production cost of product that is sold.

7.2. Outlays per ruble of commercial product.

7.3. The turnover rate of turnover assets (in days).

7.4. Funds for economic stimulation (material incentive fund, fund for social and cultural activities and housing construction, fund for the development of production).

The standard forms for this section are 7.1 and 7.2.

Section 8. Organizational and Technical Level of Production

8.1. Availability of comprehensively mechanized and automated enterprises, production facilities, shops, sectors and lines (at the end of the year).

8.2. Relative decrease in number of workers and growth in labor productivity due to measures for raising the technical level of production.

8.3. Percentage of workers performing work that has been fully mechanized. Percentage of workers engaged in manual labor in the basic shops and in the auxilliary shops.

Number of workers engaged in lifting and transport, loading and unloading and warehouse work.

8.4. Percentage of workers using the brigade form for organizing and motivating labor.

8.5. Measures for improving management. Automated control systems and automated planning systems. Systems for controlling product quality, unified systems for design documentation and technological documentation.

Outlays for measures to improve management and the economic efficiency of their realization (total, including from lowering production cost and the freeing of workers).

Expenditures for maintaining the management apparatus.

The standard forms for this section are 8.1, 8.2 and 8.3.

Section 9. Protecting the Environment and the Rational Use of Natural Resources

9.1. Amount of gaseous, liquid and solid production wastes being released into the atmosphere.

9.2. Availability of purification installations (devices for purifying waste gases, sewage, neutralizing and purifying solid wastes, etc.) and their brief characterization (productivity, effectiveness of purification).

9.3. Amount of outlays for measures to protect the environment (absolute and relative per ruble of net (standard) product or another indicator of product volume that has been established for the branch.

The standard forms for this section are 9.1, 9.2 and 9.3.

Section 10. Automated processing of Data of the Passport of an Association

10.1. The passport forms and the extracts from them must comply with the requirements of GOST [state standard] 6.10.1-75 "Unified documentation systems used in automatic control systems - General Statutes" (sections 3 and 4). The passport is drawn up in the form of a structured collection of tables with numbered paragraphs and lines.

10.2. The coding of data is performed in accordance with the all-union product classifiers [klassifikator] of enterprises and units of administrative-territorial division, technical-economic indicators and with other all-union classifiers.

When using branch classifiers provision must be made for the automatic transfer to the notations of all-union classifiers.

10.3. Passport data is stored in machine carriers, which forms a special data base. The passport is issued in the form of computer output.

Standard Forms of a Passport

1. Passport of a production association (enterprise) (form 1.1)
2. Composition and location (form 1.2)
3. Production capacity and use (form 2.1)
4. Use of equipment (form 2.2)
5. Implemented capacity and assimilation (form 2.3)
6. Production and product sales (form 3.1)
7. Smoothness of production (form 3.2)
8. Specialization of production (form 3.3)
9. Labor intensiveness per unit of manufactured article (form 3.4)
10. Product quality (form 3.5)
11. Qualitative characteristics of basic kinds of product that is manufactured (form 3.6)
12. List of product newly assimilated by association and product removed from production (form 3.7)
13. Fixed assets (form 4.1)
14. Technological equipment on hand (form 4.2)
15. Capital construction (form 4.3)
16. Indicators of the effectiveness of fixed assets (form 4.4)
17. Consumption of material resources (form 5.1)
18. Average lowering of the norms of expenditure of material resources (form 5.2)
19. Norms of expenditure of material resources (form 5.3)
20. Use of material resources (form 5.4)
21. Labor and wages (form 6.1)
22. Labor productivity and use of work time (form 6.2)
23. Indicators of social development (form 6.3)

24. Financial indicators (form 7.1)
25. Funds for economic stimulation (form 7.2)
26. Comprehensive mechanization and automation (form 8.1)
27. Indicators of the organization-technical level of production (form 8.2)
28. Measures for improving management and new technology (form 8.3)
29. Preservation of the environment and the rational use of natural resources (form 9.1)
30. Purification installations on hand (form 9.2)
31. Outlays for measures to protect the environment (form 9.3)

*Паспорт уточняется не позднее 10 дней
после сдачи годового отчета
вышестоящей организации* (1)
(2)

ТИПОВЫЕ ФОРМЫ ПАСПОРТА ПРОИЗВОДСТВЕННОГО ОБЪЕДИНЕНИЯ (ПРЕДПРИЯТИЯ)

3)	4)	5)	6)	7)	8)	9)	10)
Форма документа по ОКУД	Министерство (ведомство)	Промышленное объединение	Территория	Город	Район	Производственное объединение (предприятие)	Отрасль

1. Passport is more precisely defined no later than 10 days after submitting annual report to higher-ranking organization

2. Standard forms of a passport of a production association (enterprise)

3. Form of document according to OKUD

4. Ministry (department)

5. Industrial association

6. Territory

7. City

8. Rayon

9. Production association (enterprise)

10. Branch

Форма 1.1 1)
**ПАСПОРТ ПРОИЗВОДСТВЕННОГО
 ОБЪЕДИНЕНИЯ (ПРЕДПРИЯТИЯ)** 5)

4)

2) № Формы	3) № страницы	Количество страниц данной Формы
1.1	1	1

19 ————— год 14)

1. Производственное объединение 6)
 (комбинат), предприятие _____

2. Промышленное объединение,
 главное управление (управле-
 ние), трест 7)

3. Министерство (ведомство) 8)

4. Отрасль 9)

5. Республика, область (край, АССР) 10)

6. Адрес 11)

7. Ф. И. О. руководителя 12)

Телекс 15)

Телеграф 16)

Банковские реквизиты 17)

Транспортные реквизиты 18)

Телефон для справок 19)

дата составления 13) Генеральный директор (директор) 20)

- | | |
|--|--------------------------------------|
| 1. Form 1.1 | 13. Date of compilation |
| 2. Form Number | 14. Year |
| 3. Page number | 15. Telephone exchange |
| 4. Number of pages in form | 16. Teletype number |
| 5. Passport of a production associ-
ation (enterprise) | 17. Bank requisition number |
| 6. Production association (combine),
enterprise | 18. Transport requisition number |
| 7. Industrial association, main
administration (administration),
trust | 19. Telephone number for information |
| 8. Ministry (department) | 20. General director (director) |
| 9. Branch | |
| 10. Republic, oblast, kray, ASSR | |
| 11. Address | |
| 12. Last name, first name and patro-
nymic of manager | |

Форма 1.2 1)

СОСТАВ 7) И МЕСТОНАХОЖДЕНИЕ

2) № формы	3) № страницы	4) Количество страниц данной формы	5) Код объедине- ния	6) Код министер- ства
1.2	1	1		

№/№ стр	8) Полное наименование пред- приятия, производств, це- хов, входящих в состав объ- единения	9) Код строки	10) Год ввода в экс- плуатацию, год закончен- ия последней или начала не- завершенной ре- конструкции	11) Местонахождение и а- дрес, банковские и транспортные реквизиты	12) Площадь зда- ния (на конец го- да)	13) в т. ч. произ- водственная
А	Б	В	Г	Д	Е	Ж
1.	Объединение в целом,	13)				
2.	в том числе:	14)				
3.	Предприятие А	15)				
4.	Производство Б					

Примечания: 1. По объединению, предприятию указывать год его основания.
2. Графа 2 заполняется по территориально удаленным от головного предприятия пред-
приятиям, производствам, цехам, имеющим свои, отличные от объединения адрес и реквизиты

1. Form 1.2

2. Form number

3. Page number

4. Number of pages in form

5. Code of association

6. Code of ministry

7. Composition and location

8. Full designation of enterprises, production facilities, and shops comprising the association

9. Line code

10. Year put into operation, year of completion of latest or the beginning of unfinished reconstruction

11. Location, address, bank and transport requisition numbers

12. Floor space of building (at end of year)

13. Association on the whole, Including

14. Enterprise A

15. Production facility B

16. Total

17. Including production floor space

18. Comment: 1. For the association, enterprise indicate year that it was assimilated. 2. Column 2 is filled out for enterprises that are far removed from the lead enterprise and which have different addresses and requisition numbers

Форма 2.1 1)

**ПРОИЗВОДСТВЕННАЯ
МОЩНОСТЬ 7)
И ЕЕ ИСПОЛЬЗОВАНИЕ**

2)	3)	4)	5)	6)
№ формы	№ страницы	Количество страниц данной формы	Код объединения	Код министер- ства
2.1	1	1		

№№ пп	8) Виды продукции	9) Ед. измерения	10) Код продукции	Среднегодовая мощность 11)		Мощность на конец года 12)		13) Использование среднегодовой мощности (%)
				14) План	15) Фактиче- ский	16) План	17) Фактиче- ский	
А	Б	В	Г	1	2	3	4	5
Надпись А		тонн	18)					
		тыс. руб.	19)					
Надпись Б		штук	20)					
		тыс. руб.	21)					
Надпись...			22)					
Всего:		тыс. руб.	23)					

Примечания: 1. Мощность определяется в двух измерениях: в числительном — в натуральном выражении в единицах, принятых для соответствующих видов продукции в планировании и учете, а в отдельных отраслях в стоимостном выражении (в знаменателе) как по видам продукции, так и по объединению в целом по всей выпускаемой продукции.
2. Код продукции здесь и далее указывается по «Общесоюзному классификатору промышленной и сельскохозяйственной продукции».

- | | |
|------------------------------------|--|
| 1. Form 2.1 | 13. Use of average annual capacity (%) |
| 2. Form number | 14. Plan |
| 3. Page number | 15. Actual |
| 4. Number of pages in form | 16. Plan |
| 5. Association code | 17. Actual |
| 6. Ministry code | 18. Article A - in tons |
| 7. Production capacity and its use | 19. In thousands of rubles |
| 8. Types of product | 20. Article B - number of items |
| 9. Unit of measurement | 21. In thousands of rubles |
| 10. Product code | 22. Article... |
| 11. Annual average capacity | 23. Total: in thousands of rubles |
| 12. Capacity at end of year | 24. Comment: 1. Capacity is measured in two ways: numerically in physical terms in units accepted for the appropriate kinds of product in planning and accounting, and in some branches in a cost expression (in a denominator) both for kinds of product and for the association on the whole for all product that is turned out. 2. Product code is indicated by classifier of industrial and agricultural product |

Форма 2.2 1)
ИСПОЛЬЗОВАНИЕ
ОБОРУДОВАНИЯ 7)

2) № формы	3) № страницы	4) Количество страниц данной формы	5) Код объединения	6) Код министер- ства
2.2	1	1		

№ № пп	Наименование показателя 8)	Код строки 9)	10) Коэффициент сменности работы оборудования		11) Коэффициент загрузки оборудования	
			12) план	13) фактически	14) план	15) фактически
А	Б	В	1	2	3	4
1. 2.	В целом по объединению По отдельным видам обо- рудования	16)				

1. Form 2.2
2. Form number
3. Page number
4. Number of pages in form
5. Association code
6. Ministry code
7. Use of equipment
8. Name of indicator
9. Line code
10. Machine shift coefficient
11. Equipment workload coefficient
12. Plan
13. Actual
14. Plan
15. Actual

16. On the whole for association
17. For individual kinds of equip-
ment

Форма 2.3 1)
**ВВЕДЕННАЯ МОЩНОСТЬ
 И ЕЕ ОСВОЕНИЕ 7)**

2) № формы	3) № страницы	4) Количество страниц данной формы	5) Код объединения	6) Код министерства
2.3	1	1		

№№ пп	8)	9)	10)	11)	12)		13)	14)	15)
	Виды продукции	Единица измере- ния	Код произу- кции (по классифи- кагору)	Мощность по провн- ту (годовая)	Продолжительность освоения проеент- ной мощности (ме- сяцы)	Фантиче- ский	Уровень освоения проектной мощности (%)	Выпуск про- дукции, рас- считанный исходя из норм освоения (годовой)	Фантиче- ский выпуск продукции за год
А	Б	В	Г	1	2	3	4	5	6
Изделия А			тонн	18)					
			тыс. руб.	19)					

Изделия Б 20)
 тыс. руб.

Изделия 21) 22)
 Всего 23)
 тыс. руб.

Примечание: 1. Мощность и выпуск продукции определяются в двух измерениях: в числителе — в натуральном выражении, в единицах, принятых для соответствующих видов продукции в планировании и учете, а в отдельных отраслях также в стоимостном выражении (в знаменателе) как по видам продукции, так и по объединению в целом по всей выпускаемой продукции

1. Form 2.3
2. Form number
3. Page number
4. Number of pages in form
5. Association code
6. Ministry code
7. Introduced capacity and its assimilation
8. Kinds of product
9. Unit of measurement
10. Product code (by classifier)
11. Capacity by plan (annual)
12. Length of time for assimilating planned capacity (months)
13. Level of assimilation of planned capacity (%)

14. Product output, estimated based on assimilation norms (annual)
15. Actual product output for year
16. By norm
17. Actual
18. Article A - in tons
19. In thousands of rubles
20. Article B - number of items - in thousands of rubles
21. Article...
22. In thousands of rubles
23. Total
24. Comment: 1. Capacity and product output are determined in two ways: numerically in physical terms in units accepted for appropriate kinds of product in planning and accounting, and in individual branches also in a cost expression (in denominator) both for kinds of product and for the association on the whole for all product that is manufactured

Форма 3.1
1)
**ПРОИЗВОДСТВО
И РЕАЛИЗАЦИЯ
ПРОДУКЦИИ**

2) № формы	3) № страницы	4) Количество страниц данной формы	5) Код объедине- ния	6) Код министер- ства
3.1	1	2		

№ п/п	7) Виды продукции	8) Единица измерения	9) Код продук- ции	10) Производство		11) Стоимость выпущенной продукции (тыс. руб.)		12) % выполнения плана $\frac{\text{гр. 4}}{\text{гр. 3}} \times 100$
				13) план	14) факти- чески	15) план	16) факти- чески	
				1	2	3	4	
1.	Объем реализации про- дукции с учетом вы- полнения обязательств по поставкам	17) тыс. руб.						
2.	Объем реализации в оп- товых ценах, принятых в плане	18) тыс. руб.						
3.	Производство продукции в натуральном выра- жении	19) штуки						
	по плану, утверж- денному вышестоя- щими организация- ми	20) тонн						
	изделие А							
	изделие Б							
	По плану, утверждено- му объединением (основ- ные виды)	21) штуки						
	+ изделие В							
	изделие Г	22) тонн						
	Всего по объединению	23)						

24)
Примечание: 1. По каждому изделию в числителе указывается общий выпуск продукции, в знаменате-
ле — в том числе продукция на экспорт. Специализированную продукцию отметить знаком
«+» в графе «Б».
2. В графе «Б» приводятся наименования основных видов продукции с выделением товаров на-
родного потребления в групповом ассортименте, включая товары для детей.
3. Другие виды изделий приводятся в целом по строке «прочая продукция». Стоимость про-
дукции приводится по чистой (нормативной) продукции или другому показателю объема
продукции, установленному для данной отрасли.

Key:

1. Form 3.2 Production and Product Sales
2. Form Number
3. Page Number
4. Number of pages in form
5. Association Code
6. Ministry Code
7. Kinds of product
8. Unit of measurement
9. Product code
10. Produced
11. Cost of product (in thousands of rubles)
12. Percentage of plan fulfillment
13. Planned
14. Actual
15. Planned
16. Actual
17. Volume of product sales considering fulfillment of pledges for deliveries (in thousands of rubles)
18. Volume of sales in wholesale prices, accepted in the plan (in thousands of rubles)
19. Production of product in physical terms
20. By plan, approved by superior organization Article A - number of items Article B - in tons
21. By plan approved by the association (basic kinds)
22. +Article C - number of items Article D - in tons
23. Total for the association
24. Comment: 1. For each article numerically is indicated the total output of product, in the denominator including product for export. Specialized product is noted by the "+" mark in column B.
2. In column "B" is given the designation of the basic kinds of product in group assortment, including goods for children
3. Other kinds of articles are cited on the whole in the line "other product". Cost of product is cited for net (standard) product or other indicator of product volume established for the branch

Форма 3.2
РИТМИЧНОСТЬ 1)
ПРОИЗВОДСТВА

2) № формы	3) № страницы	4) Количество страниц данной формы	5) Код объедине- ния	6) Код министер- ства
3.2	1	1		

№ № лп	7) Наименование показателя	8) Код строки	9) В процентах	
			10) план	11) фактически
А	Б	В	1	2

1. Удельный вес выпуска продукции в 3-м месяце соответствующего кварта-
 тала в общем объеме выпуска продук-
 ции за квартал:
 марте
 июне
 сентябре
 декабре

12)

2. Удельный вес выпуска продукции в 4-м квартале в общем объеме выпус-
 ка продукции за год

13)

Примечание: Рассчитывается по чистой (нормативной) продукции или другому показателю объема, установлен-
 ному для данной отрасли

14)

1. Form 3.2 Smoothness of Production
2. Form number
3. Page number
4. Number of pages in form
5. Association Code
6. Ministry Code
7. Name of indicator
8. Line code
9. Percentage
10. Plan
11. Actual

13. Percentage of product output
 in the fourth quarter of the total
 output for the year

14. Comment: Estimated according
 to net (standard) product or other
 volume indicator established for
 the branch

12. Percentage of product output in
 third month of appropriate quarter
 of the total product output for the
 quarter: March, June, September,
 December

Форма 3.3 1)
СПЕЦИАЛИЗАЦИЯ
ПРОИЗВОДСТВА

№ 2) формы	№ 3) страницы	Количество страниц данной формы 4)	Код объединения 5)	Код министерства 6)
3.3	1	1		

№ № пп	Наименование показателя 7)	Код строки 8)	в процентах 9)	
			по плану 10)	фактически 11)
А	В	В	1	2
1.	Удельный вес специализированной продукции в общем объеме выпуска продукции	12)		
2.	Удельный вес комплектующих изделий, полуфабрикатов и заготовок, полученных со стороны, в общем объеме выпуска продукции	13)		

Примечание: 1. Удельный вес специализированной продукции исчисляется к общему объему выпуска продукции по чистой (нормативной) продукции или другому показателю объема продукции, установленному для данной отрасли.
14) 2. Удельный вес комплектующих изделий, полуфабрикатов и заготовок исчисляется к общему товарной (валовой) продукции

1. Form 3.3 Specialization of product
2. Form number
3. Page number
4. Number of pages in form
5. Association code
6. Ministry code
7. Name of indicator
8. Line code
9. Percentage
10. Planned
11. Actual

12. Percentage of specialized product of total product output

13. Percentage of assembly articles, semi-manufactures and half-finished articles obtained elsewhere, of the total product output

14. Comment: 1. Percentage of specialized product estimated to total product output according to net (standard) product or other indicator of product volume established for the branch 2. Percentage of assembly articles, semimanufactures and half-finished articles estimated to total commodity (gross) product

Форма 3.4
ТРУДОЕМКОСТЬ 1)
ЕДИНИЦЫ ИЗДЕЛИЯ

№ формы 2)	№ страницы 3)	Количество страниц данной формы 4)	Код объединения 5)	Код министерства 6)
3.4	1	1		

№/№ пп	Виды продукции 7)	Код продукции 8)	Трудоемкость единицы изделия (в нормо-часах) 9)	
			10) план	11) фактически
А	Б	В	1	2

Изделие А
 Изделие Б
 : : :
 : : : 12)

Примечание: Трудоемкость единицы изделия приводится по основным видам продукции машиностроительного
 13) производства и других отраслей, в которых этот показатель исчисляется

1. Form 3.4 Labor Intensiveness
 Per Unit of Manufactured Article

2. Form number

3. Page number

4. Number of pages in form

5. Association code

6. Ministry code

7. Kinds of product

8. Product code

9. Labor intensiveness per unit
 of manufactured article - (in
 norm-hours)

10. Planned

11. Actual

12. Article A Article B

13. Comment: The labor intensive-
 ness per unit of manufactured arti-
 cle is cited for the basic kinds of
 product of a machine building branch
 and of other branches in which this
 indicator is estimated

Форма 3.5

1)

КАЧЕСТВО ПРОДУКЦИИ

№ формы 2)	№ страницы 3)	Количество страниц данной формы 4)	Код объединения 5)	Код министер- ства 6)
3.5	1	1		

№ № ли	Показатели 7)	Код строки 8)	9) в процентах	
			10) по плану	11) фактически
А	В	В	1	2

1. Удельный вес продукции высшей категории качества 12)
2. Удельный вес продукции первой категории качества 13)
3. Удельный вес продукции второй категории качества 14)
4. Удельный вес продукции, выпускаемой по государственным стандартам 15)
5. Другие показатели качества продукции, установленные для данной отрасли 16)

Примечание: Удельные веса исчисляются к общему объему выпуска продукции по чистой (нормативной) продукции или другому показателю объема продукции, установленному для данной отрасли

1. Form 3.5 Product Quality
2. Form number
3. Page Number
4. Number of pages in the form
5. Association code
6. Ministry code
7. Indicators
8. Line code
9. Percentage
10. Planned
11. Actual

16. Other indicators of product quality established for the branch

17. Comment: Percentages are estimated to the total product output according to net (standard) product or other indicator of product volume established for the branch

12. Percentage of product of highest category of quality

13. Percentage of product for first category of quality

14. Percentage of product of second category of quality

15. Percentage of product manufactured according to state standards

Форма 3.6

КАЧЕСТВЕННЫЕ 1) ХАРАКТЕРИСТИКИ ОСНОВНЫХ ВИДОВ ВЫПУСКАЕМОЙ ПРОДУКЦИИ

№ 2) формы	№ 3) страницы	4)	Количество страниц данной формы	5) Код объединения	6) Код министер- ства
3.6	1		1		

№№ пп	Виды продукции 7)	Код продукции 8)	Качественные характеристики 9)
А	Б	В	Г

1. Form 3.6 Qualitative Characteristics of Basic Kinds of Product that is Manufactured
2. Form number
3. Page number
4. Number of pages in the form
5. Association code

6. Ministry code
7. Kinds of product
8. Product code
9. Qualitative characteristics

Форма 3.7

ПЕРЕЧЕНЬ ПРОДУКЦИИ, ОСВОЕННОЙ ОБЪЕДИНЕНИ- ЕМ ВПЕРВЫЕ И СНЯТОЙ С ПРОИЗВОДСТВА

№ 2) формы	№ 3) страницы	4)	Количество страниц данной формы	5) Код объедине- ния	6) Код мини- стерства
3.7	1		1		

№№ пп	Освоено производством впервые 7)	Код строки 8)	Объем выпуска в натуральном выражении 9)	Уровень унификации 10)	№№ пп 11)	Снято с производства 12)	Код строки 13)
А	Б	В	Г	Д	Е	Ж	З

Издание А 14)
Издание Б

.....

Издание К 15)
Издание Л

.....

Примечание: По изданию, освоенным в СССР впервые, после наименования изделия указать —
16)

1. Form 3.7 List of Product Newly Assimilated by Association and Product Removed from Production
2. Form number
3. Page number
4. Number of pages in the form
5. Association code
6. Ministry code
7. Assimilated by production first
8. Line code
9. Volume of output in physical terms

10. Level of unification
11. Paragraph numbers
12. Removed from production
13. Line code
14. Article A Article B
15. Article K Article L

16. Comment: For manufactured articles assimilated in the USSR for the first time, following the name of the article indicate "assimilated in the USSR for the first time"

Форма 4.1 1)
ОСНОВНЫЕ ФОНДЫ

№ 2) формы	№ 3) страницы	Количество 4) страниц данной формы	Код 5) объедине- ния	Код 6) мини- стерства
4.1	1	1		

№ № 1) пп	7) Показатели (тыс. руб.)	8) Код строки	Среднегодовая стоимость 9) (фактически)	На конец года 10) (фактически)
А	Б	В	Г	Д

1. Стоимость основных фондов, всего, в том числе промышленно-производственных, всего 11)
из них:
— здания
— сооружения
— машины и оборудование

1. Form 4.1 Fixed Assets

2. Form number

3. Page number

4. Number of pages in the form

5. Association code

6. Ministry code

7. Indicators (in thousands of rubles)

8. Line code

9. Average annual cost (actual)

10. At the end of the year (actual)

11. Value of fixed assets, total, including industrial-production assets, total Including - buildings, - installations, - machines and equipment

Форма 4.2
**НАЛИЧИЕ 1)
ТЕХНОЛОГИЧЕСКОГО
ОБОРУДОВАНИЯ**

№ 2) формы	№ 3) страницы	Количество 4) страниц данной формы	Код 5) объедине- ния	Код 6) мини- стерства
4.2	1	1		

№ № 1) пп	Виды оборудования 7)	8) Единица измерения	9) Код строки	10) Основные цехи (на конец года)	11) Вспомогательные цехи (на конец года)
А	Б	В	Г	Д	Е

1. По видам оборудования: 12

2. По уникальному оборудованию: 13)

1. Form 4.2 Technological Equipment On Hand

2. Form number

3. Page number

4. Number of pages in the form

5. Association code

6. Ministry code

7. Kinds of equipment

8. Unit of measurement

9. Line code

10. Basic shops (at end of year)

11. Auxilliary shops (at end of year)

12. By kinds of equipment

13. By unique equipment

Форма 4.3
КАПИТАЛЬНОЕ ¹⁾
СТРОИТЕЛЬСТВО

№ формы ²⁾	№ страницы ³⁾	Количество страниц данной формы ⁴⁾	Код объедине- ния ⁵⁾	Код минис- терства ⁶⁾
4.3	1	2		

№№ пп	Показатели ⁷⁾	Единица измерения ⁸⁾	Код строки ⁹⁾	План ¹⁰⁾	Фактически ¹¹⁾
А	Б	В	Г	Д	Е

1.	Объем капитальных вложений, всего в том числе: строительно-монтажных работ из них: выполненных возмездно	12)	тыс. руб.
2.	Объем незавершенного строительства на конец года	13)	тыс. руб.
3.	Ввод в действие основных производственно-производственных фондов	14)	тыс. руб.
4.	Ввод в действие производственных мощностей	15)	тыс. руб.
	изделия А	16)	шт.
	изделия Б	17)	тыс. руб.
5.	В том числе прирост мощностей за счет:	18)	тыс. руб.
	а) технического перевооружения	19)	тыс. руб.
	изделия А	20)	шт.
	изделия Б	21)	тыс. руб.
	б) реконструкции	22)	тыс. руб.
	изделия А		тыс. руб.
	изделия Б		тыс. руб.
6.	Сметная стоимость нового строитель- ства, реконструкции, расширения (нужное подчеркнуть) объектов про- изводственного назначения в том числе: сумма, освобождаемая с начала строитель- ства (по состоянию на конец года)	23)	тыс. руб.
			тыс. руб.

1. Form 4.3 Capital Construction
2. Form number
3. Page number
4. Number of pages in the form
5. Association code
6. Ministry code
7. Indicators
8. Unit of measurement
9. Line code
10. Planned
11. Actual
12. Volume of capital investments, total in thousands of rubles. Including: construction and installation work in thousands of rubles, of which: amount executed by the organization's own resources
13. Amount of incompletd construction in thousands of rubles at end of year
14. Introduction of fixed industrial - production assets in thousands of rubles
15. Introduction of production capacities
16. Articles A - items divided by thousands of rubles
17. Articles B - items divided by thousands of rubles
18. Including increase in capacities through:
19. Technical re-outfitting
20. Articles A - items divided by thousands of rubles
21. Articles B - items divided by thousands of rubles
22. Reconstruction Articles A - and Articles B - items divided by thousands of rubles
23. Estimated cost of new construction, reconstruction, expansion of projects for production, including: sum assimilated from start of construction (as of end of the year) in thousands of rubles

Форма 4.4

**ПОКАЗАТЕЛИ
ЭФФЕКТИВНОСТИ
ОСНОВНЫХ ФОНДОВ**

1)

2) № формы	3) № страницы	4) Количество страниц данной формы	5) Код объедине- ния	6) Код мини- стерства
4.4	1	1		

№ п/п	Наименование показателей 7)	8) Единица измерения	Код строки 9)	10) Фактически
А	Б	В	Г	Д

- | | | | |
|----|--|-----|-----------|
| 1. | Фондоотдача 11) | 12) | руб. коп. |
| 2. | Фондовооруженность на 1 работающего | 13) | руб. |
| 3. | Удельные капитальные вложения на 1 руб. прироста продукции | 14) | руб. |
| 4. | Удельные капитальные вложения на единицу введенной производственной мощности | | руб. коп. |

Примечание: Показатель фондоотдачи исчисляется по утвержденному показателю объема продукции, используемому для расчета производительности труда

15)

1. Form 4.4 Indicators of the Effectiveness of Fixed Assets
2. Form number
3. Page number
4. Number of pages in the form
5. Association code
6. Ministry code
7. Name of indicators
8. Line code
9. Unit of measurement
10. Actual
11. Out-put capital ratio
12. Capital-labor ratio (per worker) in rubles and copecks
13. Relative capital investments per ruble of increase in product, in rubles
14. Relative capital investments per unit of introduced production capacity, in rubles and copecks
15. Comment: The output-capital ratio is estimated according to an approved indicator of product volume used for estimating labor productivity

Форма 5.1

ПОТРЕБЛЕНИЕ МАТЕРИАЛЬ- НЫХ РЕСУРСОВ 1)

№ Формы 2)	№ страницы 3)	Количество страниц данной формы 4)	Код объедине- ния 5)	Код мини- стерства 6)
5.1	1	1		

№ № ли	Наименование материальных ресурсов 7)	Единица измерения 8)	Код строки 9)	План 10)	Факти- чески 11)
А	В	В	Г	Д	Е

1. Сырье 12) 13)
2. Материалы
3. Полуфабрикаты (комплектующие изделия) 14)
4. Топливо
5. Тепловая энергия 16) 15)
6. Электроэнергия 17) 18)
7. Стоимость сырья, материалов, комплектую-
щих изделий на 1 руб. нормативной чистой
продукции, или другого показателя объема
продукции, установленного для данной от-
расли

руб.

19) Примечание: Данные по сырью, материалам и топливу приводятся также по важнейшим ви-
дам в натуральном выражении

1. Form 5.1 Consumption of Material
Resources

2. Form number

3. Page number

4. Number of pages in the form

5. Association code

6. Ministry code

7. Name of material resources

8. Unit of measurement

9. Line code

10. Planned

11. Actual

12. Raw materials in thousands of
rubles

13. Materials in thousands of
rubles

14. Semi-manufactures (assembly
articles) in thousands of rubles

15. Fuel in thousands of rubles

16. Thermal energy in thousands of
rubles

17. Electric power in thousands
of rubles

18. Value of raw materials, ma-
terials, assembly articles per ru-
ble of net product or other indi-
cator of product volume established
for the branch in rubles

19. Comment: Data on raw materials,
materials and fuel are also cited
for the most important kinds in
physical terms

СРЕДНЕЕ СНИЖЕНИЕ НОРМ РАСХОДА МАТЕРИАЛЬНЫХ РЕСУРСОВ 1)

№ Формы 2)	№ страницы 3)	Количество страниц данной Формы 4)	Код объедине- ния 5)	Код мини- стерства 6)
3.2	1	1		

№ пп	Наименование материальных ресурсов 7)	Код строки 8)	Задание * (%)		Фактически (%)	
			к базисному году 9)	к предше- ствующему году 10)	к базисному году 11)	к предше- ствующе- му году 12)
А	Б	В	1	2	3	4

1. Снижение норм расхода
а) важнейших видов сырья и мате-
риалов 13)
.....
сырья по видам
материалы по видам
б) топливно-энергетические ресурсы
по видам 14)
.....

* Задание указывается с учетом обязательств по встречному плану 15)

1. Form 5.2 Average Lowering of the Norms of Expenditure of Material Resources
2. Form number
3. Page number
4. Number of pages in the form
5. Association code
6. Ministry code
7. Name of material resources
8. Line code
9. Assignment * (%) for base year
10. Assignment * (%) for preceding year
11. Actual (%) for base year
12. Actual (%) for preceding year
13. Lowering of norms of expenditure of the most important kinds of raw materials and materials raw materials by kind materials by kind
14. Fuel and power resources by kind
15. Assignment is indicated with consideration to pledges in the counter plan

Форма 5.3

НОРМЫ РАСХОДА МАТЕРИАЛЬНЫХ РЕСУРСОВ

2) № формы	3) № страницы	4) Количество страниц данной формы	5) Код объедине- ния	6) Код мини- стерства
5.3	1	1		

№№ пп	Наименование продукции (виды работ) 7)	8) Единица измерения	Код строки 9)	Наимено- вание мате- риального ресурса 10)	Норма по плану 11)	Факти- ческий расход 12)
А	Б	В	Г	Д	Е	З
1.	Изделие А	на единицу продукции	13)			
2.	Группа изделий	на единицу выпуска (группы)	14)			

1. Form 5.3 Norms of Expenditures of Material Resources
2. Form number
3. Page number
4. Number of pages in the form
5. Association code
6. Ministry code
- 7.. Name of product (kinds of work)
8. Unit of measurement
9. Line code
10. Name of material resource
11. Norm by plan
12. Actual expenditure
13. Article A per unit of product
14. Group of articles per unit of output (groups)

Форма 5.4

ИСПОЛЬЗОВАНИЕ ¹⁾ МАТЕРИАЛЬНЫХ РЕСУРСОВ

№ формы ²⁾	№ страницы ³⁾	Количество страниц данной формы ⁴⁾	Код объедине- ния ⁵⁾	Код мини- стерства ⁶⁾
5.4	1	1		

№ пп	Показатели ⁷⁾	Единица измерения ⁸⁾	Код строки ⁹⁾	Фактически ¹⁰⁾
А	Б	В	Г	Д
1.	Суммарные величины отходов и потерь ¹¹⁾	тыс. руб.		
	а) сырья	—		
	б) материалов	—		
	в) топлива	—		
	г) теплоэнергии	—		
2.	Коэффициент извлечения продукции из исходного сырья ¹²⁾	%		
3.	Удельный вес отходов и потерь в общем объеме потребленных ¹³⁾	—		
	а) сырья	—		
	б) материалов	—		
	в) топлива	—		
	г) теплоэнергии	—		
4.	Удельный вес используемых отходов в общем объеме отходов ¹⁴⁾	%		
	в том числе:			
	отходов, передаваемых другим предпри- ятиям	—		
5.	Удельный вес используемых побочных и попутных продуктов и вторичных энергетиче- ских ресурсов в общем объеме вторичных ресурсов (в годовом выходе) ¹⁵⁾	%		
16)	Примечание: «Коэффициент извлечения»... приводится по тем отраслям, в которых предусмотрен его исчисление			

1. Form 5.4 Use of Material Resources
2. Form number
3. Page number
4. Number of pages in the form
5. Association code
6. Ministry code
7. Indicators
8. Unit of measurement
9. Line code
10. Actual
11. Total amounts of waste and losses of a) raw materials; b) materials; c) fuel; d) thermal energy, in thousands of rubles
12. Coefficient of extraction of product from basic materials
13. Percentage of waste and losses in total consumed a) raw materials; b) materials; c) fuel; d) thermal energy, in thousands of rubles

14. Percentage of used waste in total of waste, including waste transferred to other enterprises, in percentage
15. Percentage of used by-products and secondary power resources of the total secondary resources (in annual yield), in percentage
16. Comment: The "coefficient of extraction"...is cited for those branches in which its estimate is called for

Форма 6.1
ТРУД И ЗАРАБОТНАЯ ПЛАТА 1)

№ формы 2)	№ страниц 3)	Количество страниц данной формы 4)	Код объединения 5)	Код министерства 6)
6.1	1	2		

№ пп	Показатели 7)	Единица измерения 8)	Код строки 9)	По проценту 10)	План 11)	Фактически 12)
А	Б	В	Г	1	2	3
1.	Среднесписочная численность работников в том числе: промышленно - производственный персонал из них: рабочих — всего	13) чел.				
2.	Численность рабочих на конец года: основных вспомогательных	14) —"				
3.	Численность рабочих на конец года, выполняющих работу: при помощи машин и механизмов по наблюдению за работой автоматов вручную при машинах и механизмах из них: занятые тяжелым трудом в том числе — женщины вручную не при машинах и механизмах из них: занятые тяжелым трудом в том числе — женщины	15) —" —" —" —" —" —" —"				
4.	Коэффициент текучести рабочих	16) %				
5.	Численность работников аппарата управления на конец года	17) чел.				
6.	Фонд заработной платы всего персонала в том числе: промышленно - производственного персонала из него рабочих	18) тыс. руб. тыс. руб. —"				
7.	Среднемесячная заработная плата одного работника промышленно - производственного персонала в том числе рабочего	19) руб. руб.				
8.	Норматив заработной платы на 1 рубль чистой (нормативной) продукции или другого показателя объема продукции, установленного для данной отрасли	20) руб.				

21) Примечание: 1. По показателю среднесписочная численность работников в графе 1 приводится в числителе — плановая величина, в знаменателе — факт численности
2. Данные (кроме первой и четвертой строк формы) приводятся по промышленно-производственному персоналу

1. Form 6.1 Labor and Wages
2. Form number
3. Page number
4. Number of pages in the form
5. Association code
6. Ministry code
7. Indicators
8. Unit of measurement
9. Line code
10. According to draft
11. Planned
12. Actual
13. Average number of workers, including industrial-production personnel, including common workers, in number of men
14. Number of workers at end of year: basic (and) auxiliary, in number of men
15. Number of workers at end of year performing work: using machines of automatic equipment, manual labor at machines and mechanisms, including those engaged in heavy labor, including women
16. Coefficient of worker turnover
17. Number of workers in management at end of year, in number of men
18. Wage fund for all personnel in thousands of rubles, including wages for industrial-production personnel in thousands of rubles, including common workers
19. Average monthly wage per worker of industrial-production personnel, including the common worker, in rubles
20. Standard wage per ruble of net (standard) product or other indicator of product volume established for the branch, in rubles
21. Comment: According to indicator the average number of personnel in column 1 is cited in number - planned value, in denominator - limit of number. 2. Data (except first and 4th lines) cited for industrial-production personnel

Форма 6.2

ПРОИЗВОДИТЕЛЬНОСТЬ ТРУДА И ИСПОЛЬЗОВАНИЕ РАБОЧЕГО ВРЕМЕНИ ¹⁾

№ формы 2)	№ страницы 3)	Количество страниц данной формы 4)	Код объединения 5)	Код министерства 6)
6.2	1	2		

№№ пп	Показатели ⁷⁾	Единица измере- ния ⁸⁾	Код строки ⁹⁾	По проекту ¹⁰⁾	П л а н ¹¹⁾	Фактически ¹²⁾
А	Б	В	Г	Д	Е	З

1. Производительность труда на одного работающего ¹³⁾ руб.
2. Рост производительности труда ¹⁴⁾ %
3. Выработка на одного рабочего в натуральном выражении (указать вид продукции) ¹⁵⁾
4. Средний процент выполнения норм выработки рабочими-сдельщиками ¹⁶⁾ %
5. Удельный вес рабочих, работающих по технически обоснованным нормам ¹⁷⁾ %
6. Потери рабочего времени рабочих из-за прогулов, целодневных и внутрисменных простоев и неявок с разрешения администрации в процентах и календарному фонду рабочего времени ¹⁸⁾ чел.-дни %
7. Сверхурочные работы ¹⁹⁾ человеко-часы
8. Работа в выходные и праздничные нерабочие дни ²⁰⁾ человеко-дни

21) Справка. Численность на конец года: промышленно-производственного персонала... человек, в том числе мужчин... чел., женщин... чел.

22) Примечание: 1. Производительность труда в стоимостном выражении определяется по чистой (нормативной) продукции или другому показателю объема продукции, установленному для данной отрасли

2. Производительность труда в натуральном выражении исчисляется по показателю, установленному для данной отрасли

3. Данные приводятся по промышленно-производственному персоналу

Key:

1. Form 6.2 Labor Productivity and Use of Work Time
2. Form number
3. Page number
4. Number of pages
5. Association code
6. Ministry code
7. Indicators
8. Unit of measurement
9. Line code
10. According to project
11. Planned
12. Actual
13. Labor productivity per worker in rubles
14. Growth in labor productivity (percent)
15. Power worker output in physical terms (show kind of product)(percent)
16. Average percentage of fulfillment of norms of output by piece workers (percent)
17. Percentage of workers working according to technically justified norms
18. Losses of work time due to unauthorized absences, day-long and intra-shift delays and absences authorized by the administration in man-days in percent of calendar fund of work time (percent)
19. Overtime in man hours
20. Work on days off and holidays in man-days
21. Note: Number of personnel at end of year: industrial-production personnel...men, including number of men and number of women
22. Comment: 1. Labor productivity in cost expression is determined by net (standard) product or other indicator of product volume established for the branch 2. Labor productivity in physical terms estimated by indicator established for the branch 3. Data cited for industrial-production personnel

Форма 6.3

**ПОКАЗАТЕЛИ
СОЦИАЛЬНОГО РАЗВИТИЯ**

№ формы 2)	№ страницы 3)	Количество страниц данной формы 4)	Код объедине- ния 5)	Код мини- стерства 6)
6.3	1	1		

№ пп	Показатели 7)	Единица измерения 8)	Код строки 9)	Фактически 10)
А	Б	В	Г	Д

- | | | | |
|----|---|-----|----------------|
| 1. | Размер фонда материального поощрения (начислено) на одного работающего | 11) | руб. |
| 2. | Размер фонда социально-культурных мероприятий и жилищного строительства (начислено) на одного работающего | 12) | руб. |
| 3. | Ввод в действие жилой площади | 13) | м ² |
| 4. | Количество работников, состоящих на учете на получение жилой площади | 14) | чел. |
| 5. | Обеспеченность работников предприятия дошкольными детскими учреждениями | 15) | % |

1. Form 6.3 Indicators for Social Development

2. Form number 3. Page number

4. Number of pages 5. Association code

6. Ministry code 7. Indicators

8. Unit of measurement 9. Line code

10. Actual

11. Amount of material incentive fund (estimated) per worker in rubles

12. Amount of fund for cultural and social activities and housing construction (estimated) per worker in rubles

13. Introduction of living space, in square meters

14. Number of workers qualified to receive living space, in number of men

15. Provision of enterprise workers with pre-school childrens institutions, in percentage

ФИНАНСОВЫЕ ПОКАЗАТЕЛИ 1)

№ 2) формы	№ 3) страницы	Количество страниц данной формы 4)	Код объедине- ния 5)	Код министер- ства 6)
7.1	1	1		

№ № пп	Показатели 7)	Единица измерения 8)	Код строки 9)	План 10)	Фактически 11)
А	Б	В	Г	1	2

1. Сумма балансовой прибыли
в том числе от реализации 12) тыс. руб.
тыс. руб.
2. Рентабельность:
и производственным фондам 13) %
и себестоимости продукции
3. Затраты на 1 рубль товарной продук- 14) коп.
ции
4. Оборачиваемость оборотных средств 15) дни
5. Средства, полученные из единого фон- 16) тыс. руб.
да развития науки и техники мини-
стерства

Примечание: Рентабельность и себестоимости продукции в обрабатывающих отраслях определя-
ется как отношение прибыли и себестоимости продукции за вычетом стоимости ис-
пользования сырья, топлива, энергии, материалов, полуфабрикатов и комплектующих
изделий 17)

1. Form 7.1 Financial Indicators
2. Form number 3. Page number
4. Number of pages in form
5. Association code
6. Ministry code
7. Indicators 8. Unit of measurement
9. Line code 10. Planned
11. Actual
12. Total balanced profit in thou-
sands of rubles, including from
sales in thousands of rubles
13. Profitability:
to production funds (%)
to production cost (%)
14. Outlays per ruble of commercial
product in copecks
15. Turnover rate of turnover assets,
in days

16. Assets received from the
unified fund for the development
of science and technology of the
ministry, in thousands of rubles
17. Comment: Profitability to
production cost in the processing
branches is determined as the
ratio of profit to production cost
less cost of using raw materials,
fuel, energy, materials, semi-
manufactures and assembly articles

**ФОНДЫ ЭКОНОМИЧЕСКО-
ГО СТИМУЛИРОВАНИЯ** ¹⁾

№ формы 2)	№ страницы 3)	Количество страниц данной формы 3)	Код объедине- ния 4)	Код министер- ства 5)
7.2	1	1		

№ № пп	Показатели 7)	Единица измерения 8)	Код строки 9)	План 10)	Факти- чески начислено 11)	Остаток на конец года фактически 12)
А	Б	В	Г	1	2	3

1. Фонд материального поощрения в процентах к фонду заработной платы персонала ¹³⁾ тыс. руб. %
2. Фонд социально-культурных мероприятий и жилищного строительства ¹⁴⁾ тыс. руб.
3. Фонд развития производства ¹⁵⁾ тыс. руб.

1. Form 7.2 Economic Stimulation Funds
2. Form number 3. Page number
4. Number of pages in the form
5. Association code 6. Ministry code
7. Indicators 8. Unit of measurement
9. Line code 10. Planned
11. Actually added on
12. Remainder at end of year, actual
13. Material incentive fund, in thousands of rubles, and in percentage of the wage fund, in percentage
14. Fund for social and cultural measures and housing construction, in thousands of rubles
15. Fund for development of production, in thousands of rubles

Форма 8.1

КОМПЛЕКСНАЯ МЕХАНИ- ЗАЦИЯ И АВТОМАТИЗАЦИЯ

1)

№ формы 2)	№ страницы 3)	Количество страниц данной формы 4)	Код объедине- ния 5)	Код министер- ства 6)
8.1	1	1		

№№ пп	Наличие автоматизированных, комплексно - меха- низированных предприятий, производства, цехов, участков, линий 7)	Код строки 8)	Количество единиц (на конец года) 9)
А	Б	В	Г
1.	Комплексно-механизи- рованные: 10)		
2.	Автоматические линии 12)		

1. Form 8.1 Comprehensive Mechanization
and Automation

2. Form number 3. Page number

4. Number of pages in the form

5. Association code 6. Ministry code

7. Availability of automated, comprehensive-
mechanized enterprises, production facilities,
shops, sectors and lines

8. Line code 9. Number of units at end of year

10. Comprehensive-mechanized: shop (and) sector

11. Automated (production) lines

ПОКАЗАТЕЛИ ОРГАНИЗАЦИОННО-ТЕХНИЧЕСКОГО УРОВНЯ ПРОИЗВОДСТВА

2) № формы	3) № страницы	4) Количество страниц данной формы	5) Код объедине- ния	6) Код министерства
8.2	1	1		

№ № п/п	Показатели 7)	Единица измерения 8)	Код строки 9)	Фактически 10)
а	б	в	г	д

1. Рост производительности труда за счет мероприятий по повышению технического уровня производства 11)
2. Удельный вес рабочих, выполняющих работу полностью механизированным способом 12)
3. Удельный вес рабочих, занятых ручным трудом, — всего 13)
в том числе:
— в основных цехах
— во вспомогательных цехах
4. Численность рабочих, занятых ручным трудом на подъемно-транспортных, погрузочно-разгрузочных и складских работах 14)
5. Удельный вес рабочих, охватываемых бригадной формой организации и стимулирования труда 15)

16) Примечание: Данные по строкам 2, 3, 4, 5 приводятся по состоянию на конец года

1. Form 8.2 Indicators of the Organization-Technical Level of Production (percent)
2. Form number
3. Page number
4. Number of pages in form
5. Association code
6. Ministry code
7. Indicators
8. Unit of measurement
9. Line code
10. Actual
11. Growth in labor productivity by measures for raising the technical level of production (percent)
12. Percentage of workers performing work that is fully mechanized (percent)
13. Percentage of workers engaged in manual labor, total in percent, including in basic shops and in auxiliary shops, in percentage
14. Number of workers engaged in manual labor involving lifting and transporting, loading and unloading and warehouse work, number of men
15. Percentage of workers included in the brigade form of organization and stimulating labor, in percentage
16. Comment: Data in lines 2, 3, 4, and 5 given for end of year

Форма 8.3 1).
**МЕРОПРИЯТИЯ ПО СОВЕР-
 ШЕНСТВОВАНИЮ УПРАВ-
 ЛЕНИЯ И НОВОЙ ТЕХНИКЕ**

2) № формы	3) № страницы	4) Количество страниц данной формы	5) Код объедине- ния	6) Код министерства
8.3	1	2		

№ п/п	Мероприятия 7)	8) Код строки	9) Затраты на создание (тыс. руб.)	10) Годовая экономия от внедрения (тыс. руб.)		11) Высвобож- дение рабочих (чел.)
				12) всего	в том числе 3) от сниже- ния затрат	14)
A	B	B	I	3	3	4

1. Автоматизированные системы управления (АСУ) объединением предприятий, производствами 15)
2. Автоматизированные системы управления технологическими процессами, сложным оборудованием (АСУ ТП) 16)
3. Системы автоматизированного проектирования, конструирования (САПР) 17)
4. Системы управления качеством продукции 18)
5. Организационно-экономические мероприятия по совершенствованию управления 19)
6. Мероприятия по новой технике 20)

21) Справка: 1. Расходы на содержание аппарата управления составили
 2. Затраты на мероприятия по новой технике составили

тыс. руб.
 тыс. руб.

1. Form 8.3 Measures to Improve Management and New Equipment
2. Form number
3. Page number
4. Number of pages in the form
5. Association code
6. Ministry code
7. Measures
8. Line code
9. Outlays for creating (thousands of rubles)
10. Annual savings from adoption (thousands of rubles)
- 11.
12. Total
13. Including from lowering production
14. Liberation of workers (men)
15. Automated control systems (АСУ), associated (enterprises and production facilities)
16. Automatic systems for controlling technological processes and complicated equipment (АСУ ТП)
17. Systems for automatic planning and designing (САПР)
18. Systems for controlling product quality
19. Organizational-economic measures for improving management
20. Measures for new equipment
21. Note: 1. Expenditures for maintaining the management apparatus amounted to:
 in thousands of rubles 2. Outlays for measures for new equipment amounted
 to: in thousands of rubles

Форма 9.1

ОХРАНА ПРИРОДЫ И РАЦИОНАЛЬНОЕ ИСПОЛЬЗОВАНИЕ ПРИРОДНЫХ РЕСУРСОВ

№ 2) Формы	№ 3) Страницы	Количество страниц данной формы 4)	Над объединением 5)	Над министерства 6)
9.1	1	3		

№ № по	Показатели 7)	Единица измерения 8)	Над строки 9)	По проценту 10)	Фактически 11)
А	Б	В	Г	Д	Е

- ОХРАНА АТМОСФЕРНОГО ВОЗДУХА** 12)
1. Объем вредных веществ, отходящих от стационарных источников загрязнения в воздушный бассейн, всего 13) тонн в год
в том числе:
— твердые —"
— газообразные и жидкие —"
2. Объем вредных веществ, отходящих от стационарных источников загрязнения в воздушный бассейн, всего 14) тонн в год
в том числе:
— твердые —"
— жидкие —"
- ОХРАНА И РАЦИОНАЛЬНОЕ ИСПОЛЬЗОВАНИЕ ВОДНЫХ РЕСУРСОВ** 15)
3. Объем водопотребления 16) тыс. м³ в год
4. Объем водосточения 17) —"
в том числе:
— объем нормативно-очищаемых сточных вод —"
— объем загрязненных сточных вод —"
5. Объем оборотного и повторно-последовательного водоснабжения 18) —"
6. Объем твердых и жидких веществ, извлеченных из сточных вод 19) тыс. тонн в год
- РАЦИОНАЛЬНОЕ ИСПОЛЬЗОВАНИЕ ПОЛЕЗНЫХ ИСКОПАЕМЫХ И ТВЕРДЫХ ОТХОДОВ** 20)
7. Извлечение полезных ископаемых: 21) %
— из недр —"
— при обогащении —"
8. Образование твердых и жидких отходов (без учета веществ, извлеченных из отходов газов и сточных вод и выбрасываемых в воздушный и водный бассейны с отходящими газами и сточными водами) 22) тыс. тонн в год

Примечание: При отсутствии проектных данных приводятся данные по техническому регламенту

23)

Key:

1. Form 9.1 Preservation of the environment and the Rational Use of Natural Resources
2. Form number
3. Page number
4. Number of pages in the form
5. Association code
6. Ministry code
7. Indicators
8. Unit of measurement
9. Line code
10. By project
11. Actual
12. Preserving the atmosphere
13. Amount of harmful substances released from stationary sources of pollution into the air, total, including: solids and gaseous and liquids, in tons per year
14. Amount of detected and treated harmful agents emitted from stationary sources of pollution into the air, total, including solids, gaseous and liquids, in tons per year
15. Preservation and rational use of water resources
16. Amount of water used, in cub. M per year
17. Amount of drainage, including amount of purified sewage, amount of polluted sewage, in cub. M. per year
18. Amount of recycled water supply
19. Amount of solid and liquid agents extracted from sewage, thousand tons per year
20. Rational use of minerals and solid wastes
21. Extraction of minerals from the earth, from enriching, from tech. reprocessing, in percent
22. Formation of solid and liquid waste (without considering agents taken from waste gas and sewage and released into air and water with waste and sewage, in thousands of tons per year)
23. Lacking plan data use data from technical control

Форма 9.2

НАЛИЧИЕ ОЧИСТНЫХ СОО- РУЖЕНИЙ 1)

№ формы 2)	№ страницы 3)	Количество страниц данной формы 4)	Код объедине- ния 5)	Код министер- ства 6)
9.2	1	1		

№ № пп	Наличие очистных сооружений 7)	Код строки 8)	Количество 9)	Производи- тельность 10)	Эффективность очистки 11)
А	Б	В	1	2	3

- | | | | | | |
|----|--|-----|--|--|--|
| 1. | УСТАНОВКИ ДЛЯ ОЧИСТКИ ОТХОДЯЩИХ
ГАЗОВ | 12) | | | |
| 2. | УСТАНОВКИ ДЛЯ ОЧИСТКИ СТОЧНЫХ
ВОД | 13) | | | |
| 3. | УСТАНОВКИ ДЛЯ ОЧИСТКИ ТВОРДЫХ
ОТХОДОВ | 14) | | | |

1. Availability of Purification Installations
2. Form number 3. Page number
4. Number of pages in the form
5. Association code 6. Ministry code
7. Purification installations on hand
8. Line code 9. Number
10. Productivity 11. Efficiency of purification
12. Installations for purifying waste gas
13. Installations for purifying sewage
14. Installations for purifying solid waste

ЗАТРАТЫ НА МЕРОПРИЯТИЯ ПО ОХРАНЕ ПРИРОДЫ ¹⁾

№ формы 2)	№ страницы 3)	Количество страниц данной формы 4)	Код объедине- ния 5)	Код министер- ства 6)
9.3	1	1		

№ № ли	Показатели 7)	Единица измерения 8)	Код строки 9)	Затраты 10)	
				план 11)	факт. 12)
А	Б	В	Г	1	2

1. Всего затрат на мероприятия по охране природы и рациональному использованию природных ресурсов 13) тыс. руб.-
в том числе:
— капитальные затраты —"
— текущие (эксплуатационные затраты) —"
2. Из общей суммы затрат: 14) тыс. руб.-
— затраты на охрану воздушного бассейна —"
— затраты на охрану и рациональное использование водных ресурсов —"
— затраты на уничтожение и обезвреживание твердых и жидких отходов (без отходов, уловленных и извлеченных из отходящих газов и сточных вод и выбрасываемых в воздушный и водный бассейны с отходящими газами и сточными водами) —"
— затраты на прочие цели —"

1. Form 9.3 Outlays for Measures to Protect the Environment
2. Form number 3. Page number
4. Number of pages in the form
5. Association code 6. Ministry code
7. Indicators 8. Unit of measurement
9. Line code 10. Outlays
11. Plan 12. Actual
13. Total expenditures for measures to protect the environment and the rational use of natural resources, including: capital expenditures (and) current (operational) expenditures, in thousands of rubles

14. From total expenditures: expenditures for protecting the atmosphere (and) expenditures for the protection and rational use of water resources (and) expenditures for destroying and detoxifying solid and liquid waste (excluding wastes that have been detected and removed from waste gases and sewage and released into the atmosphere and into water with waste gases and sewage water) (and) expenditures for other purposes, in thousands of rubles

8927
CS0: 1820

ELABORATION OF STATE PLANNING STANDARDS PROPOSED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 10, Oct 79 pp 29-37

[Article by N. Ivanov, subsection head of the USSR Gosplan: "On the Elaboration of State Standards"]

[Text] The decree approved in July 1979 by the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Strengthening the Effect of the Economic Mechanism on Raising Production Efficiency and Work Quality" noted that one of the most important areas for improving all planning work is to ensure balanced economic growth. In this regard the USSR Gosplan has as one of its basic tasks the problem of introducing a system of scientifically based technical and economic standards and rates. With them it should be possible to determine the demand of the national economy or its sectors for material, labor and financial resources, the degree of utilizing production potential, the duration for producing industrial, agricultural, transport and construction product, and so forth. At present there are departmental standards for the consumption of raw products, materials, energy and fuel for the production of a unit of the given product manufactured at the given enterprise or in the given sector.

It must be said that in working out the standards and rates in the ministries, the production associations and the enterprises, various methods for calculating them are in effect. Some proceed from standards approved by the USSR Gosplan and these provide for the realizing of scientific and technical achievements, the mobilizing of internal production reserves and other progressive production factors, while others derive from the report data for the consumption of material and labor resources, and still others employ subjective methods for calculating the standards proceeding from the actual capabilities of the sector or subsector.

At the same time in construction state standards have already been established for the construction time of enterprises, buildings and installations, standards for the backlog of production capacity, its technical readiness and capital investments, and sectorial standards for incomplete construction. In industry state standards have been set for the period required to reach designed capacity. In determining the demand of

construction for rolled metals, cement and lumbars, they proceed from the state consumption rates for these materials per million rubles of construction and installation work. There are a number of other standards in effect, but they do not encompass all the indicators of the national economic plan and are not interlinked into a unified system.

The standards should be a means for introducing the achievements of technical progress. They should be compiled, for example, not per unit of product, but rather per unit of capacity or the productivity of machines, equipment or a unit (per kilowatt hour of turbine capacity, per horsepower of tractor, per ton of vehicle capacity, per cubic meter of excavator shovel capacity, and so forth).

We feel that the standards should be created solely on the basis of engineering and economic calculations which provide the intensive and effective development of our socialist economy. For example, we need to determine the demand of the national economy for cement for carrying out construction and installation work. For this, in each sector a representative construction project is selected, that is, a project with the most progressive design solutions for the sector, and on the basis of the data for it, sectorial standards are drawn up which are then averaged as a whole for the national economy. In this manner a state standard is created for the demand for cement per million rubles of construction and installation work.

The state standards for working out the current and long-range plans for the economic and social development of the USSR should contain the normative indicators approved by the USSR Gosplan (and by the government for the most important products) and these indicators would be obligatory for all the planning and economic bodies. They are the directive for the compilers of the state plan aimed at introducing advanced equipment and new production methods within a short period of time and at a maximum savings of the material, labor and financial resources.

The standards cannot be based on the actual resource expenditure rates, as this is the "yesterday" in the methods of social production, and in certain instances the elevation of mismanagement to a standard.

The directive nature of the state standards consists in the fact that they formulate the demand of the state to incorporate in social production the equipment of "tomorrow," thereby providing for technical progress. In the postwar times, a significant reduction has been achieved in the consumption of conditional fuel units both by increasing the share of high-calorie fuel (oil and gas) in the fuel balance, as well as by installing increased capacity turbine units (200,000, 300,000, 500,000 and 800,000 kilowatts) with an increased atmospheric pressure (130 and 240 atm.). A further reduction in the consumption of conditional fuel units can be achieved only as a result of the joint efforts of the machine builders, the power workers and the employees in the fuel sectors. For this reason the state standards over the long run must envisage an improvement in the turbine

units for the machine builders, and a maximum savings of fuel in using the turbines for the power workers.

At the same time, the production methods of machine building products require a fundamental reorganization.

Thus, the proportional amount of scrap ferrous metals in machine building over recent years has been 28 percent. It has long been shown that metal working by cutting is uneconomic. For example, in manufacturing the lugs of a construction crane, the billet weighs 314 kg, and after machining 42 kg. After the installation of electroslag casting at the Kiev Bol'shevik Production Association, the weight of the stock slightly exceeds the weight of the end product. At the Kiev Krasnyy Ekskavator Association, hardware is manufactured by cutting. Of the 453 tons of metal, 253 tons are lost as chips.

Such facts are also noted not only in machine building. The cement industry produces only 15 percent of the total volume of the output of fast-setting types of cement. The prefabricated reinforced concrete industry consumes 30 percent of the cement produced in the nation, mainly of the 400 grade. The use of low-grade cement requires great fuel and time expenditures in curing the products. The conversion of the cement industry to producing high-grade cements will reduce the amount of additives, but will also tell on the gross volume of the produced cement. This is disadvantageous for the cement workers but is effective for the national economy.

For producing prefabricated reinforced concrete elements, the cement should provide a rapid increase in strength with hydrothermal processing. In this process the main factor is the rise in the strength of the products over a 24-hour period. The duration of this process of increasing the strength of the products manufactured from portland cement equals 7 days, but only 3 days in manufacturing them from the fast-setting cement. The initial hardening process occurs at a temperature of +25° and lasts 8-12 hours. After the hardening of the cement, the article is transportable. Under such conditions the turnover of the molds and fittings is accelerated, the shift factor is increased for the equipment of the reinforced concrete enterprises, and their production capacity rises.

The irrational use of raw products, materials, fuel and energy also is found in other sectors of industry and the national economy. The efficiency of technical progress in social production is measured primarily by the savings of material and labor resources. This is achieved by a systematic reequipping of production and by a constant change in the production processes.

The use of state standards requires that the economic bodies work out measures to shorten the duration of production operations and to eliminate the material-, energy-, labor- and capital-intensive types of production, and this will orient the designers, the planners and the workers in

industry, agriculture, transportation, communications and construction, as well as the enterprises of the service spheres to achieve a maximum savings of resources.

The establishing of the state standards involves extensive engineering and economic work on a scale of the sector and the entire national economy. For carrying out this work, within the planning and economic bodies, there must be special subdivisions (sections, subsections and bureaus). Their practical task is to organize the implementing of economy, and primarily of material and labor resources, on the basis of the state's technical policy. Within the USSR Gosplan the current structural unit of this sort should become the organizational and methodological center for working out the state standards.

The state standards are divided into consumer and production. The elaboration of consumer standards can be concentrated in the ministries of public health, education, culture, trade and public dining, services, housing and utility systems, and so forth, with the involvement of the public and trade union organizations. The production standards should be worked out by the ministries which consume the material and labor resources together with the scientific research and design organizations, the prominent scientists and production innovators. For the purposes of protecting the standard specifications against departmental or local tendencies, the USSR must work out a unified procedure for the system of standards setting and the aggregating of indicators for the sector or for the entire national economy.

The creation of a procedure to work out averaged aggregated standard indicators is the most involved procedural question. In our opinion, in aggregating the indicators, the component amounts on the basis of which the standards were calculated should be preserved. As the model used in calculating the standard, one must employ indicators of representative enterprises, advanced enterprises, the results of scientific discoveries and the achievements of production innovators. In compiling the reports on the fulfillment of the standards, it is essential to break them down, that is, to break them into component parts for the purpose of ascertaining the positive and negative factors.

The state standards should become the connecting link between the plans for product output and the completion of production capacity. For this reason the demand for the same types of materials must be aggregated according to the capacity producing them. For example, the production of rolled metal should be assigned by grade to specific rolling mills.

The state standards should be applied in calculating the individual sections of the state plans and the normative physical intersectorial planning balance for the production of the means of production and consumer goods, for the reproduction of production capacity and nonproduction installations.

One of the main tasks of national economic planning is to determine the amount of the demand of society and provide a balance between production and the demand. F. Engels wrote the following on the interdependence and balance between production and demand: "In a communist society it will be easy to calculate both production and consumption. Since it is known how much is required as an average for each individual, then it is very simple to calculate how much is needed for a certain number of persons, and since production will no longer be in the hands of individual private entrepreneurs, but rather will be in the hands of the communities and their administrations, it will not be difficult to regulate the production according to demand."¹

The means of consumption include the products of the sectors of material production, food and nonfood commodities as well as the product produced by the sectors of material production in the form of services provided to the population (the services of passenger transport, in the area of communications, retail trade, public dining and domestic services). These also include the services provided to the public by the enterprises and institutions of the nonproduction sphere (the housing and utility systems, public health, education, culture and art).

The consumption standards of the population for food and industrial items should consider the sex and age composition of the population, the national and geographic features of the regions of the country, and be measured in an amount of per capita and family demand, as well as the demand of social institutions and organizations.

A per capita consumption standard for foodstuffs is restricted by the standards of a rational diet differentiated depending upon the age, sex and vocational composition of the population and national habits. A per capita consumption standard for industrial goods (individual consumer goods) is determined by the level of the cultural needs and income of the consumers.

The demand of a family for consumer durables also depends upon the growth of the cultural needs and the material well-being of the family. In compiling standards for the consumption of industrial goods, it is essential to consider not only the quantity of the initially acquired goods, but also their constant replacement because of physical wear or obsolescence.

The demand of the public organizations and the institutions of public health, education, culture and art for food and industrial goods as well as the demand of employees for uniforms and special clothing and footwear are determined by the size of the corresponding contingent.

¹K. Marx and F. Engels, "Soch." [Works], Vol 2, p 535.

In working out consumer standards for the corresponding planning period, consideration is given to the amount of the increase in the production of consumer goods and the expansion of the material and technical base for the public service sphere. The increase in the production of consumer goods is determined by the volume of production to be obtained from the capacity put into operation during the planning period. For creating new capacity time is needed for the designing and construction of new enterprises and for reaching designed capacity at them.

The consumer standards include the consumption standards for material and nonmaterial services. The former are provided to the population by the enterprises of municipal and suburban transportation, communications, trade, public dining, consumer services, the housing and utility systems, and the latter by the institutions of education, culture and art. The amount of the service consumption standard depends primarily upon the scale of the available material and technical base of the service sphere, that is, upon the size of the nationalized housing, the number of beds in hospitals, places in schools, seats in theaters, the capacity of urban transport and other enterprises and institutions. An increase in the volume of consumer services is related to an expanding of the material and technical base, that is, to the construction of new housing, dining rooms, stores, and to an increase in the length of the water and sewage systems.

The solution to the problem of equalizing the housing, utility, consumer and other conditions of life for the urban and rural population presupposes a grouping of population points in terms of their available material and technical base, that is, housing, utility, domestic service, trade, public dining, transportation and communications enterprises, and the institutions of education, public health and culture.

In working out the consumer standards it is very important to determine the list of state standards, their composition and indicators.

The state standard for urban and suburban transportation should set the amount of transportation services to be provided to one resident, as well as the degree of equipping the population points with the means of transportation. An indicator for the density of the streetcar, trolley bus, bus and suburban transport lines is used for describing the saturation of the population points with the means of transport. The volume of transport services is measured by the number of trips made per day by one resident. The demand for the means of transportation is calculated proceeding from their full-load factor which is equal to one. It must be pointed out that the indicator for the density of the network of transport enterprises should be set considering the density of the population in the towns or administrative rayons.

The indicators for the density of communications, trade, public dining and consumer service enterprises, public health, education and cultural institutions in a given city or rayon characterize the rationality of their placement, and the capacity or handling capacity of the enterprises

or institutions serves as the basis for calculating the state standards which determine the amount of services to be provided.

The amount of the consumer standard for services should vary. In the calculation of great significance is the standard for the optimum capacity or handling capacity of the enterprises and institutions serving the population. The presence of a large but only one dining room in a rayon or town can scarcely be considered a positive solution to the public dining problem. The capacity of these enterprises or institutions should depend upon the population density of the microrayon, city or oblast.

It is essential to make a careful choice of the indicators worked out by the scientific research, design or statistical institutions before incorporating them in the calculation of the state standard. Moreover it is essential to consider that the use of economic accountability in the public service sphere does not always coincide with the interests of the consumer. For example, the economic organizations of the bus fleet are interested in transporting the public and receiving a profit, and this at times leads to the overloading of the buses, while the consumer is interested in using normally loaded buses. In this regard the report data on the operation of municipal transport, the trade, consumer service enterprises and other enterprises in the service sphere require correcting.

It is also essential to improve the procedural constructing of a series of statistical indicators involved in describing the services provided to the population. For example, the indicator widely found in statistics for the supply of physicians for the population is calculated per 10,000 persons. At the same time, it requires correcting for the population density. For example, in Latvia and Tadzhikistan in 1977, the supply of physicians for the population calculated per square kilometer was, respectively, 39.7 and 25.8 persons, that is, it was 35 percent lower in Tadzhikistan. Calculated per 10,000 persons of the population, this equaled, respectively, 41 and 25.8 physicians, that is, in the second instance the number of physicians was 46 percent lower. Seemingly this is a small difference. However, in the number of the population this difference is crucial in the calculation per physician.

The Communist Party and the Soviet government give great significance to the correct determining of the needs of the population. In this regard, the procedure for elaborating the consumer standards should also be adjusted.

The production demand of society is determined by the production volume of the means of production for internal sectorial consumption and for satisfying the needs of the state and scientific institutions, as well as for completing production capacity and installations in the service sphere, and for major overhaul on production capacity, buildings and installations.

The continuous growth in the production of the means of production and the means of consumption is related to a systematic increase in the production potential of the nation, chiefly the expanded reproduction of production capacity and installations for the service sphere. Along with putting new capacity into operation in the national economy, existing capacity is also replaced as it becomes worn out and obsolete.

Thus, the production standards must serve the sphere of producing the means of production, capital construction (expanded reproduction of production capacity) and major overhaul (simple reproduction of production capacity and nonproductive installations), and for this reason are divided into three groups. The first group includes the standards for the proportional consumption of material and labor resources. These control the consumption of raw products, materials, fuel, power, and semifinished products in producing the product; they are set per unit of production capacity or per unit of product. It is essential to bear in mind that the standards for the proportional consumption of resources per unit of production capacity are utilized in planning the construction of new enterprises and reconstructing existing ones, and the standards per unit of product are employed in compiling the production plans of the enterprises or the sectors.

The state standards for the consumption of material and labor resources should be based upon the introduction of new implements of production and the use of advanced but already used production methods. If the standards employ the achieved proportional resource expenditures, then this would mean the halting of the forward movement of our economy. For this reason the elaboration of the standards must be turned into a means of introducing scientific discoveries and the achievements of production innovators into the production methods.

The state standards should ensure a maximum savings of material and labor resources. The former is achieved as a result of the following: Carrying out strict savings of resources at the existing enterprises of industry, agriculture, transportation and construction; interchangeability of raw products and semifinished products; the creation of an extensive network of enterprises to process secondary raw materials; the use of waste-free production methods whereby all elements of the initial raw material are used. With such technology, all types of production wastes are eliminated and they are completely processed in the production process.

Industrial enterprises release hundreds of millions of tons of sulfur dioxide, nitrous oxides, carbon dioxide, and suspended solid matter into the atmosphere. Water consumption is growing in all national economic sectors. For this reason the task has arisen of reducing and subsequently eliminating the gaseous, liquid and solid production wastes. This can be done by creating self-contained production systems at existing enterprises by introducing local purification methods and reutilization of the air or water after their reconditioning in accord with production regulations or

by developing new production systems and methods which intensify the entire production process and exclude the harmful effect of the enterprises on the surrounding nature. Here the enterprises the operation of which is based on waste-free technology are to be turned from single-product combines into multiproduct ones.

For the accelerated introduction of waste-free technology, for example, in metallurgical production, in working out the standards it is possible to provide for the obtaining of sulfuric acid in the processing of the iron ore.

The problem of saving water is assuming national economic significance. At the same time, 45 percent of the entire quantity of consumed water is spent on cooling in heat-exchange devices. The changeover from water cooling to air will make it possible to significantly reduce water consumption at the enterprises of the petrochemical, chemical, metallurgical and other industrial sectors.

Industry widely employs chemicals, acids and bases for neutralization, and as a result of this water is polluted. But if the process of neutralization is replaced by membrane technology and the liquid mixes are separated on this basis, there is no need to use the listed chemicals.

The regulating of water consumption by the state standards forces the enterprises to introduce advanced production methods. For example, the development of waste-free production strengthens the process of forming combines in industry, but disrupts the so-called purity of the sector, and complicates sectorial planning and the setting of standards for the consumption of material and labor resources. However these arguments could scarcely serve as an obstacle in the struggle to reduce losses in social production. The normed demand for material resources should be provided for by the corresponding volume of production, and above all for the progressive types of products. For example, in steel production there should be a rise in the share of special steels, in cement output there should be more higher grades of cement, in mineral fertilizer production there should be more fertilizers with a higher nutrient content, and so forth.

The saving of live labor, or more accurately a reduction in the number of employees, is achieved by eliminating heavy and labor-intensive jobs. For this reason it is essential to set a standard number of work places per unit of capacity or product. As the achievements of technical progress are introduced, the number of work areas will be reduced, and this will provide a savings of live labor in social production.

In the second group of production standards are the standards used in construction. In the process of construction, 80 percent of the produced cement is consumed, 20 percent of rolled metals, all structural elements and installed equipment, and a portion of the products of the chemical, woodworking and certain sectors of heavy industry.

The standards in construction include the following standards: The proportional consumption of equipment and proportional capital investments per unit of designed capacity; the proportional capital investments for creating new capacity; capital investments aimed at the maintaining and technical reequipping of capacity at existing enterprises (measured per unit of product); the proportional expenditure of building and installation materials, structural elements and parts per million rubles of construction-installation work; those which determine the amount of the withdrawal of production capacity because of its physical wear and obsolescence and the increase in production capacity by carrying out organizational and technical measures (these are measured in percent of the capacity at the beginning of the planning period); the average sectorial duration for creating capacity; the proportional expenditure of capacity of the contracting organizations calculated per million rubles of construction and installation work.

In the methods of compiling the standards, it is essential to mention separately the method of the individual determination of proportional capital investments in building industrial enterprises, power plants or trunk lines (railroads and communications lines), the product or services of which are used both in the production sphere and in the service sphere.

In determining standards in construction, a major role is played by the optimum amount of production capacity of an enterprise in the sectors of material production. This problem should be studied by production engineers, economists, construction workers and transport workers in order that there be an examination of the aggregate expenditures (of industry, transportation and trade) both in the process of operations and in the course of construction. The working out of the methods for calculating the capacity of agricultural, construction and transport enterprises should be completed.

The third group includes production standards on major overhauls. These consist of standards for the proportional consumption of spare parts per unit of production capacity, the proportional expenditure of building materials and proportional labor intensiveness calculated per million rubles of construction repair work. In addition it is essential to work out a standard for the major overhaul of buildings, equipment, machines and installations, and this would determine the advisability of major overhaul on the given unit.

At present a widespread network of enterprises has been organized for overhauling industrial, agricultural, construction and transport equipment. This undoubtedly is helping to reduce repair costs.

Along with defining the range of industrial standards and the method of calculating them, it is also essential to solve other problems. In particular, in agriculture, in our opinion, state standards should be recommended to the kolkhozes.

Transportation concludes the process of producing a social product. However, the work of transportation is inconceivable without the consumption of material and labor resources. The transport standards include the following: The average shipping distance for individual types of freight, the proportional freight turnover per unit of produced industrial and agricultural product, and the use factor for the rolling stock. In using state standards it is possible to prevent irrational freight shipments, having simultaneously decided what type of freight transport should be developed depending upon the specific conditions.

Communications are the "industry of communicating." The amount of production capacity for the communications enterprises depends upon the capacity of the communications equipment and the productivity of the workers. The communication standards would include the standard time for handling messages and the proportional expenditure of capacity at the communications enterprise per unit of service.

It is important to have a standardization of the range of products and capacity (installations) for compiling the state standards. It must be pointed out that the product ranges employed in the planning of production and the completion of capacity are not always interrelated. Thus, the machine builders who manufacture equipment for textile mills assess their product in millions of rubles, the construction workers use the number of spindles and looms in the plans for completing capacity, while the textile workers measure the finished product in millions of square meters. Conversion factors must be worked out for coordinating the ranges of product produced by them.

The standards for the consumption of time in social production hold a special place in the state standards. These determine the duration of individual production operations and the time for manufacturing a finished product. Consequently, it is essential to calculate the standard time for sinking wells and shafts, the plowing of land, the harvesting of an agricultural crop, the manufacturing of a finished product, and so forth. The time standards depend upon the level of the production methods and organization, and the system of managing the national economic and industrial sectors. The saving of time means primarily a rise in labor productivity and a saving of the material and labor resources in circulation.

Thus, for bringing about a further rise in the intensity and efficiency of socialist social production and for raising the level of prosperity of the Soviet people, the state planning standards should be determined considering all that is advanced and all that is based on scientific discoveries and technical achievements.

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REGIONAL PLANNING IN KRASNOYARSKIY KRAY EXAMINED

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[Article by V. Ivanov: "From the Experience of the Kray Planning Commission in the Area of the Comprehensive Development of the Kray Economy"]

[Text] The twice Order of Lenin Krasnoyarskiy Kray stretches from the south to the north along both sides of the Yenisey River for almost 3,000 km, and it occupies 10.9 percent of the USSR territory. It includes the Khakasian Autonomous Oblast and the Taymyr and Evenki autonomous okrugs.

The decisions of the 24th and 25th CPSU congresses outlined a policy of further raising the economic potential in the eastern regions of the nation and a rise of their role in the national production of industrial product.

The Basic Directions for the Development of the Soviet National Economy for 1976-1980 stipulate. "To develop construction of a large coal mining works in the Kansk-Achinsk Basin and on this basis to build the Berezovskaya GRES. To put the first stage of the Achinsk Oil Refinery into operation. To continue development of the Sayanskiy territorial-production complex. To put into operation the first units of the Sayano-Shushenskiy GES and complete the first electrolysis buildings at the Sayanskiy Aluminum Plant, and build the first stage of the complex of electrical engineering plants in Minusinsk. To continue construction of the Abakan Railway Car Building Plant. To commence construction on the Boguchanskaya GES."¹

The attention given to the development of the productive forces in the kray has been caused primarily by the presence of significant natural resources on its territory, and these resources are characterized by great diversity and favorable technical and economic indicators for their industrial development.

¹"Materialy XXV S"yezda KPSS" [Materials of the 25th CPSU Congress], Moscow, Politizdat, 1978, pp 165, 226.

Concentrated on the territory of the kray are large coal reserves, including those suitable for strip mining. The potential hydropower resources are 420 billion kilowatt hours. The high concentration here of forest resources, the presence of rich deposits of nonferrous and ferrous metals, rock salt, graphite, asbestos, apatites and other minerals, convenient sites for large-scale industrial and civil construction, as well as favorable soil and climatic conditions in the southern part have created the prerequisites for the further development of the fuel and energy industrial sectors, nonferrous and ferrous metallurgy, the lumber and lumber processing, chemical and petrochemical industries and so forth, that is, the sectors which are major consumers of thermal and electric power, as well as metal-intensive machine building.

For determining the ways for the most efficient use of these riches, under the leadership of the SOPS [Council for the Study of the Productive Forces] under the USSR Gosplan, a scheme has been worked out for the comprehensive development of the productive forces in Krasnoyarskiy Kray for 1971-1980. These plans make provision for the all-round development of industry, transportation and agriculture, the nonproductive sphere, the rational use of labor resources, the protection of nature and so forth.

An extensive program planned for 1971-1980 for the comprehensive development of the productive forces in Krasnoyarskiy Kray is being successfully carried out. As a result of the consistent carrying out of measures elaborated by the party and soviet bodies, definite advances have been made in increasing the economic potential of the kray. Over the years of the Ninth Five-Year Plan alone, the total volume of industrial production rose by 1.5-fold, and was 35.5 billion rubles, or almost as much as was produced in the Seventh and Eighth five-year plans, taken together. Changes have occurred in the industrial structure of the kray with a rise in the proportional amount of the product of nonferrous metallurgy, machine building and metal working, and light industry.

The economy of the kray has continued to develop rapidly in the Tenth Five-Year Plan. The volume of industrial production in the kray over the 3 years has risen by 19.5 percent, and this is above the quotas of the five-year plan. The leading collectives of the kray which have assumed obligations to produce an additional 1 billion rubles of product in the Tenth Five-Year Plan (by the early completion and development of production capacity, the overfulfillment of plan quotas and the approval of counterplans), over the 3 years of the five-year plan have produced 580 million rubles of this amount.

The 3-year plan for the purchasing of potatoes and vegetables, livestock and poultry, milk, eggs and wool has been overfulfilled.

Over the 3 years of the five-year plan, a significant volume of capital construction has been carried out, and housing with a total area of 5.2 million m² has been built along with general educational schools for 57,600 places, children's preschool institutions for 24,000 places, and hospitals with 2,500 beds.

Over the last 8 years, the volume of industrial production has risen by 1.8-fold (in comparison with 1970). More than 660 new enterprises and production lines have been put into operation.

Beginning in 1972, Krasnoyarskiy Kray began to be put as a separate line in the plan. Because of this the krayplan [kray planning commission] was entrusted with the duties of working out the basic indicators of the plan for all the sectors (regardless of their departmental affiliation) for the territory of the kray. Within the krayplan, additional sections for long-range planning and sectorial planning were organized, and the position of deputy krayplan chairman for territorial and long-range planning was introduced.

The krayplan works out the draft plans for the current and long-range periods for all the economic sectors, as well as the plans for socioeconomic development on the entire territory of the kray, the development of the territorial-production complexes and industrial centers. It is also concerned with other questions related to the integrated development of the kray's economy.

The actual work makes it possible for the krayplan to detect disproportions in the comprehensiveness of the development and placement of production in the kray, as well as in the use of labor and natural resources, and to work out and submit proposals for improving the use of production capacity, the conservation of nature, and the development of the production and social infrastructure.

The drawing up of the draft annual and five-year plans for economic and social development is carried out by the sections of the krayplan under the leadership of the CPSU kraykom and the executive committee of the kray soviet on the basis of proposals from the enterprises and organizations on dates set by government decrees. For this purpose forms are worked out as well as a list of the basic indicators in the draft plan (on the basis of standardized forms of the USSR and RSFSR Gosplans) and these are sent to the kray administrations, the associations, enterprises and organizations. Upon receiving the replies with the proposals of the enterprises and organizations on the basic indicators of the draft plan, the krayplan analyzes their conformity to the quotas of the five-year plan in terms of the production growth rate, the volume of capital construction for production projects, housing and sociocultural measures, as well as for the growth of labor productivity, the use of existing and newly completed production capacity, and when necessary makes corrections.

The enterprises and organizations receive the control figures late, and are deprived of an opportunity to provide an effective working out of their proposals for the draft plan for the krayplan. For the same reason a significant portion of the enterprises and organizations are significantly late in submitting materials, and this deprives the krayplan of an opportunity to thoroughly analyze the basic draft indicators.

The basic draft indicators of the enterprises and organizations are worked out with the sectorial sections of the CPSU kraykom and the executive committee of the kray soviet. In a summary form the draft comprehensive plan is examined at a joint session of the bureau of the CPSU kraykom and the executive committee of the kray soviet, and after the elimination of the suggested changes is submitted to the RSFSR Council of Ministers and the USSR and RSFSR Gosplans. Letters are also sent to the USSR and RSFSR ministries and departments, and these reflect the basic problems requiring solution in the planned year, including questions of a social and domestic nature.

As a rule, appended to the letter are the draft basic indicators for the comprehensive development of the enterprises and organizations of the appropriate ministries located on the kray's territory. However there is no official review of the materials of the draft plans involving the krayplan at the USSR and RSFSR ministries and departments, and conclusions on the draft plans are also not submitted by the ministries and the departments to the krayplan. As a result, in a number of instances the plans submitted to the enterprises and organizations do not always take into account the demand for their integrated development. In our opinion it would be advisable for the krayplan to defend the draft plan in the ministries and departments together with the sectorial sections of the RSFSR Gosplan for the list of questions related to the comprehensive development of the territory.

Due to its small staff, the personnel of the krayplan cannot encompass the broad range of questions such as the development of the industrial sectors of the Union and republic level, capital construction for the territory of the kray, the locating of new enterprises in the kray, the planning of industrial centers, the questions of protecting nature, and so forth.

The CPSU kraykom and the kray executive committee provide great help and support to the krayplan.

The krayplan gives particular attention to the preplanning studies for the long-range development of the productive forces in Krasnoyarskiy Kray. Using the forces of the scientific and design organizations and the production collectives, the krayplan organizes preplanning studies in the most important areas. These include the comprehensive development schemes for the productive forces of the kray, the planning of such industrial regions as Zharypovskiy, Noril'sk, Sayano-Shushenskiy, the evaluating of the industrial sites of a number of towns and rayons in the kray, the technical and economic background studies [TEO] (for example, the TEO for the fuel portion of the Kansk-Achinsk fuel-energy complex or the TEO for the energy part), the general plans of cities and the general plans of the sectors, the technical plans for major projects, and so forth.

A significant achievement was the drawing up of development plans for the productive forces of Krasnoyarskiy Kray for 1971-1980 and 1981-1990. The SOPS under the USSR Gosplan, the TsENII [Central Economics Scientific Research Institute under the RSFSR Gosplan, the IKTP [Institute for

Integrated Transport Problems] under the USSR Gosplan, the Institute for Economics and the Organization of Industrial Production under the Siberian Division of the USSR Academy of Sciences, and other organizations made a major contribution to working out these plans. We must also note the great significance of the preplanning research on the development problems of the Angara-Yenisey region.

Scientific institutes have taken an active part in the work on the development of the kray's productive forces. For example, Krasnoyarskpromstroy-NIIproyekt [Krasnoyarskiy Kray Scientific Research and Design Institute for Industrial Construction] is working out the general plans for industrial centers, and in addition, it has carried out the important project on "Conditions for the Industrial Development of Cities and the Economic Evaluation of Reserve Sites in Krasnoyarskiy Kray." Other institutes are also carrying out important work.

On the basis of the forecasts of scientists from the central institutes, under the leadership of the CPSU kraykom and the executive committee of the kray soviet, the krayplan has made an important contribution to working out the development prospects of the kray's productive forces. The proposals for the integrated development of the productive forces in Krasnoyarskiy Kray for the 1981-1990 period provide a further accelerated tapping of the natural resources and the broad development of power-intensive production. In the kray there is to be more rapid development of the sectors which determine scientific and technical progress. An extensive social program will be carried out and this will bring about a substantial rise in the standard of living.

In a comprehensive approach to the development of the economy, great attention is given to such a progressive form of the territorial organization of production as the territorial production complex (TPK). This is based on a system of specialized types of production which, as a rule, are interrelated. A component element in the complex is the production infrastructure which includes a unified transportation network, construction facilities, a power system and other service sectors. Also of important significance is the social infrastructure with housing, the educational, public health and cultural institutions and enterprises, and so forth.

In Krasnoyarskiy Kray a number of TPK is being formed, and the largest of them is the Sayanskiy. Its role was mentioned by L. I. Brezhnev at the 25th CPSU Congress: "A fundamentally new stage has been planned in tapping the productive forces of Eastern Siberia. The Sayanskiy complex alone, the energy of which will be provided by the world's largest Sayano-Shushenskaya GES, will include a number of industrial centers specialized in metallurgy and machine building."²

²"Materialy XXV S"yezda KPSS," p 42.

However, as of yet many questions in planning the TPK have not been solved. The departmental approach and separateness of the ministries have led to disproportions in the development of the complexes. The ministries and departments as well as the sectorial sections of the central planning bodies are concerned with the development of the sector for which they are responsible. The questions of the integrated development of one or another area are not always of interest to them.

In the nation there is no single body which would be responsible for the organization and creation of the TPK and would be granted the corresponding rights. As before, it is still unclear who should work out the general plans for the TPK, in what places and in what sequence, on the basis of what information and with what money.

For the purposes of improving the management and planning of the TPK, it is essential to make the TPK an object of national economic planning. It would be also advisable to have a general client which in the necessary instances could reallocate the capital investments and material resources.

It is essential to have a comprehensive plan for the TPK and a network schedule for the construction of its enterprises. Such a plan will make it possible to utilize the labor, material and financial resources in the most rational manner (considering the interests of all the sectors), as well as ensure the creation of a complex-wide system of a production and social infrastructure.

The creation of the industrial centers which are the primary units of the TPK is an important prerequisite for improving production efficiency. The practices of planning and building the industrial centers in our kray have shown their great economic efficiency. For example, expenditures on the working out of the eight general plans for the kray's industrial centers as carried out by KrasnoyarskpromstroyNIIproyekt were 300,000 rubles, and here a calculated economic effect of 170 million rubles was obtained. This was achieved by reducing the expenditures for the group of enterprises in the industrial center on the engineering networks, the thermal power projects, transportation, accessways, and so forth.

However the approved general plans for certain industrial centers are being carried out unsatisfactorily.

In the development stages serious difficulties arise over the frequent changes in the composition of the enterprises of the industrial centers and the changes in their construction times. Thus, of the total funds used in the Ninth Five-Year Plan by KrasnoyarskpromstroyNIIproyekt for working out the general plans of the industrial centers, more than 50 percent went on correcting them.

Not all the questions of organizing the industrial centers have been settled in a centralized manner. The USSR Gosplan and the USSR Gostroy do not have a body which would control and settle the questions of implementing

the plans of the industrial centers, while the previously existing department of industrial centers in the USSR Gosstroy has been eliminated.

The approved decisions of the central bodies relating to improving the designing and the planning of construction on the projects common to the group of enterprises (the industrial center) unfortunately are not carried out satisfactorily by many ministries and departments.

Obviously it would be advisable to set up the corresponding bodies under the USSR Gosplan and the USSR Gosstroy. These bodies would be given responsibility for solving questions related to planning and the accelerated organizing of the industrial centers.

In Krasnoyarskiy Kray, a great deal of attention is given to socioeconomic planning. Here one of the nation's first social and economic development plans was worked out for the Tenth Five-Year Plan. All the work related to compiling the plan was carried out in accord with the decisions of the kray's party and soviet bodies. The elaboration of the basic sections of the plan and its bringing together were entrusted to the krayplan. The working out of socioeconomic development plans for the enterprises and organizations preceded this complicated work. Over 1,400 enterprises, institutions and organizations worked out and approved socioeconomic development plans for their collectives for 1976-1980.

The programs for the development of the national economic sectors of the kray in the Tenth Five-Year Plan and the strengthening of their material and technical base are component parts in the kray's socioeconomic development plan. These programs were approved by the CPSU kraykom and the kray soviet and its executive committee, as well as jointly with a number of the RSFSR ministries and departments. Thus 29 programs were approved for the development of industry, construction, transportation and communications, agriculture, trade and consumer services, public education, culture, public health, and the conservation of nature in Krasnoyarskiy Kray, and so forth.

The experience of the joint elaboration and approval of decrees by the boards of the ministries, the bureau of the CPSU kraykom and the executive committee of the kray soviet makes it possible to focus the efforts of the ministries and kray organizations on solving the main, key problems, and to institute clearer control over their fulfillment. Examples of such joint decisions are the following: the Decree of the Board of the RSFSR Ministry of Motor Transport, the Bureau of the CPSU Kraykom and the Kray Executive Committee of 17 March 1976 "On Measures to Further Improve Motor Transport Services for the National Economy and Population of Krasnoyarskiy Kray in 1976-1980"; the decision of the board of the RSFSR Ministry of Procurement, the Bureau of the CPSU Kraykom and the Kray Executive Committee of 9 June 1976 "On Measures to Further Strengthen the Material and Technical Base of Enterprises in the Krasnoyarsk Production Administration for Bakery Products in 1976-1980"; the Board of the RSFSR Kolkhoz Construction Association, the Bureau of the CPSU Kraykom and the Kray

Executive Committee of 29 May 1975 "On Measures to Strengthen the Material and Technical Base and Further Increase the Capacity of the Kray Kolkhoz Construction Association in 1976-1980"; the Decree of the Board of the RSFSR Ministry of Highways, the Bureau of the CPSU Kraykom and the Kray Executive Committee of 15 January 1976 "On Emergency Measures to Further Develop the Highway Network in the Kray for 1976-1980" and others.

The effectiveness of such decisions is substantiated by the specific results. For example, the implementing of the road development program which is of particularly important significance for the kray will make it possible to increase the length of improved-surface roads by 2.7-fold over the five-year plan, in building 3,000 km of improved surface roads.

During the Tenth Five-Year Plan great attention is being paid to accelerating the development pace of agriculture in the kray and to converting this sector to an industrial basis.

This will be accompanied by a further process of the transformation of the countryside and by the eliminating of socioeconomic and cultural-domestic differences between the city and countryside.

Also being solved are the very urgent problems for the kray of scientific and technical progress and its social consequences aimed at eliminating heavy and manual labor, the mechanization and automation of production and increasing the skill level of the workers.

Over the last decade the development of social planning in the nation has made it possible using existing experience to provide a comprehensive evaluation of those socioeconomic changes which will occur in the kray during the years of the Tenth Five-Year Plan. As a result of the work done on the socioeconomic development plan, substantial disproportions have been disclosed in the shaping of the social infrastructure for the cities and rayons of the kray. This has made it possible to outline the ways for narrowing the gap in the availability of housing, public health, educational, cultural, service, trade and other facilities for the population of the kray.

In the kray, along with the growth of the large cities, there will also be growth of the medium and small towns, and new towns will arise. For Siberia with its rapid economic development rate, the growth of urbanization is of important social significance. As a rule, the new enterprises in the kray are to be located in small towns or outside of towns where utilities and the range of social and consumer institutions are lacking. The completion of the large enterprises under construction will increase the population significantly, sometimes by many-fold. Thus, in Minusinsk it is to rise by approximately 4.5-fold and in Sayanogorsk by almost 9-fold. A number of ministries have violated the principle of comprehensiveness in building major enterprises, and plan to build only housing and children's preschool institutions in the small towns, and at times even this is incomplete.

We should not permit a repetition of the bitter experience of building the light industry enterprises in the towns of Chernogorsk, Kansk, Abakan, Minusinsk and elsewhere, where for a number of years the completed capacity has not been operated due to an absence of housing and other social facilities for the workers. This has been the result of the violation of the principle of integrated development by the enterprises, ministries and departments.

A similar state of affairs can be felt at present in building the important Minusinsk Electrical Engineering Complex, the Abakan Railway Car Building Complex and other projects.

For example, the estimate and financial calculations for the construction of the Abakan Railroad Car Building Complex envisage that 29.7 percent of the total amount of construction-installation work is to be carried out on building housing and other social projects, however during the first 8 years only 16 percent was spent for these purposes.

At present, when the role of the planned solution of social problems is steadily growing, the rights of the local bodies should be expanded. It is essential to provide a concentration of ministry funds on the building of public health, cultural and trade projects, schools and preschool institutions; head builders should be approved for the projects in the small and medium towns.

In the socioeconomic development plan an important place has been given to the vocational training of the personnel. The growth and technical improvement of the kray economy have necessitated the training of specialists in new areas such as mathematical cybernetics, railroad car building and railroad car management, automation and full mechanization of metallurgical production and so forth. The development level achieved in the kray for higher education has made it possible to satisfy only two-thirds of the requirements of the national economy for specialists.

The range of questions and duties for the sections of the krayplan is broadening, and it is becoming ever more difficult and complicated to solve them. For example, the krayplan's section for territorial planning and the placement of the productive forces is presently carrying out such vast sections as a comprehensive summary plan for the territory of the kray, for labor resources, the protection of nature, the placement of enterprises, the creation of industrial centers and TPK and so forth, and the section's staff was and remains four persons.

On a majority of the rayon and city planning commissions, there is just one regular employee, the chairman of the planning commission.

The technical and economic council of the CPSU kraykom and its section have made a definite contribution to working out proposals related to the development of the productive forces in the kray over the long-range and

current periods. This has involved the development of the productive forces in the kray, the forming of the TPK, the development of industrial centers, the better use of production capacity, and a rise in production efficiency on the basis of reconstruction. A great deal of attention has been given to working out the questions of developing the productive forces in Krasnoyarskiy Kray in 1981-1990, and in particular to examining a number of the preplanning documents such as the plans for the Sharypovskiy Industrial Center, the regional planning of the Noril'sk Industrial Region, the development plans for the bases of the construction industry in the kray, the settlement plans in the kray for the period up to 2000, and so forth.

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NEW ECONOMIC INCENTIVES TO INCREASE EFFICIENCY DETAILED

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[Article by USSR Deputy Finance Minister S. A. Sitaryan: "Important Stage of an Improvement in the Economic Mechanism"]

[Text] The growth of our economy and its huge successes and achievements are inseparably connected with the plan-based management of the national economy. Guided by Lenin's proposition that, following the formulation of the correct policy, success depends primarily on the organization of the management of the economy, at all stages of the building of the new society the Communist Party has paid and continues to pay unwavering attention to its improvement as a decisive element of the practical accomplishment of socioeconomic tasks.

Under present conditions, when a developed socialist society has been built in the USSR, the scale of social production has increased immeasurably and economic relations in the national economy have become complex, an improvement in the management of the economy is becoming an increasingly urgent and priority task. "The stage of mature socialism and the scientific-technical revolution," L. I. Brezhnev points out, "are making increasingly high demands on the mechanism of economic management, presupposing its further improvement and demanding much purposeful organizing work."

As is known, since the mid-1960's the party has persistently pursued a policy of an improvement in the entire system of management of the economy and its constant development and perfection. Concrete measures for raising the level of planning work in the national economy, the organized restructuring of the management of industry and construction, a strengthening of the role of economic methods of management and for the extensive enlistment of the working people in production management were elaborated and implemented in accordance with the decisions of the CPSU Central Committee March and September (1965) plenums and the 23d and 24th party congresses.

The measures exerted a positive influence on the development of the economy and furthered its dynamic growth. At the same time the need for the economic mechanism's decisive orientation toward the achievement of the

high efficiency and quality of work became increasingly apparent in the course of their implementation, particularly in recent years. This was dictated by both the new tasks and problems which confronted the economy and the need to surmount a number of shortcomings and negative phenomena which arose in certain spheres thereof.

The main paths of an improvement in plan-based management at the current stage were determined by the 25th CPSU Congress and subsequent CPSU Central Committee plenums. The adopted CPSU Central Committee decree "A Further Improvement in the Economic Mechanism and the Tasks of the Party and State Organs" and the CPSU Central Committee and USSR Council of Ministers joint decree "An Improvement in Planning and a Strengthening of the Impact of the Economic Mechanism on an Increase in Production Efficiency and Work Quality" are an important step in their realization.

The measures for an improvement in the economic mechanism determined in these decrees proceed from a certain continuity of the management methods which are currently being employed in practice and which have justified themselves. At the same time they envisage a number of new steps and formulate and embody a new approach to the accomplishment of a whole number of urgent tasks. The main import of these measures amounts to targeting the economic mechanism toward the achievement of high final national economic results, the fuller satisfaction of the growing requirements of the economy and the public and the balanced and dynamic growth of all social production.

Practical implementation of the measures envisaged by the CPSU Central Committee and USSR Council of Ministers decree is a major economic-political task. In order to cope with it successfully it is important to have profoundly assimilated and correctly understood the meaning and content of the adopted decisions and each clause for the purpose of insuring their successful implementation.

A further improvement in the system of planning is a central element of an improvement in the management of the economy. Understandably. Planning is the core of the economic mechanism, and the efficiency of the functioning of all elements of the management of the socialist economy largely depends on how it is organized and constructed. The decree outlines a number of measures aimed at an increase in the quality and scientific level of planning. They are geared toward insuring the comprehensive solution of economic and social problems, an acceleration of the implementation of scientific-technical discoveries and developments, an increase in the social labor productivity growth rate, the rational use of resources and a strengthening of the regime of thrift in the national economy, the correct determination of priorities in the development of the sectors and economic regions to insure progressive changes in national economy proportions and an increase in the efficiency of capital investments and all social production.

A most important direction of the accomplishment of these tasks is an increase in the role of long-term plans and the extensive application of the

program-target method in planning. The need for long-term plans has always been inherent in our economy. However, the meaning of these plans and their role and significance are increasing appreciably now. This is determined, first, by the ever increasing volumes of our production and the increase in its dynamic nature; second, by the scale and complexity of the economic and social problems to be solved; and, third, by the rapid development of scientific-technical progress and the need to take its consequences and results into consideration. For the first time in planning practice the decree determines a clear-cut system of the elaboration of interlinked long-term, five-year and annual plans. It incorporates a comprehensive program of scientific-technical progress for 20 years (by five-year period), the main directions of the country's economic and social development for 10 years (by five-year period) and five-year and annual plans.

This organization of the system of planning is designed to insure the continuous nature of the operation of individual plans and their inner interconnection and interdependence. This is to be achieved by, in particular, the necessary alterations and amplifications being made every 5 years to the comprehensive program of scientific-technical progress and by the main directions of the USSR's economic and social development being put together for the new five-year period at the same time. The five-year plan of economic and social development occupies the central place in the overall system of plans. It appears as the main form of planning and the basis of the organization of the economic activity of the ministries and departments, production associations and enterprises.

The CPSU Central Committee and USSR Council of Ministers decree determines concrete measures for a strengthening of the five-year plan's role in the overall system of planning. They provide for the elaboration of balances of material and labor resources, production capacities, the financial balance and the balance of household money income and expenditure in the state five-year plans of economic and social development; the formation in accordance with established norms of material and financial reserves and, where necessary, reserves of production capacity; the extensive use in the elaboration of five-year plans of the system of scientifically substantiated technical-economic norms and norms of the use of material and raw material resources; and the maintenance over the five-year plan of stable wholesale prices, estimated prices in construction and freight-shipment tariffs.

The fact that the fulfillment of the five-year plan at all levels of economic management will be evaluated as a cumulative result from the start of the five-year plan is of fundamental importance. The practice of annual planning is changing in connection with the strengthening of the role of the five-year plan. These plans will be drawn up on the basis of the quotas and economic norms of the five-year plan established for the given year, profiting for the necessary concretization of the quotas and also the implementation of economic and organizational measures insuring the fulfillment of the five-year plan.

The broadening of the horizon of planning is revealing new possibilities for strengthening the specific-target direction of the plans, the more correct linkage of long-term and current tasks of the development of the economy and the comprehensive solution of problems. The extensive application of the program-target method of planning should contribute to this to a considerable extent. Specific-target comprehensive scientific-technical, economic and social programs and also programs of the development of individual regions and territorial-production complexes will henceforward be elaborated as a most important component of the long-term plans. The programs must be tied in with the corresponding sections of the plan and provided with the necessary physical and financial resources. Among the priorities for the immediate future it is planned to draw up programs for economizing on fuel and metal, developing the Baykal-Amur Main Railroad zone, reducing manual labor and increasing the production of new consumer goods.

The quality, dependability and purposefulness of the plan will largely depend on its indicators. The economic content of indicators which are of a directive nature and which are firmly established in ministry, association and enterprise plans is of particular significance in planning practice. That which is new which is being introduced to the system and practice of the elaboration and application of plan indicators may be characterized thus: first, a precise list of indicators established in the five-year plans of the USSR ministries and departments and also of production associations and enterprises has been determined. Second, in connection with the strengthening of the role of the five-year plan it is planned to establish in the annual plans of the ministry, enterprise and association a more limited number of indicators than provided for in the five-year plans. By this is meant that the remaining indicators should be elaborated by them accordingly and be no lower than the targets stipulated in the five-year plan for the corresponding year. Third, substantial changes have been made to the composition of the indicators established in the five-year and annual plans. And, fourth, long-term economic norms will be applied more extensively in the plans.

In describing the new system of plan indicators particular mention should be made of the net product (normative); which it is planned to introduce in the majority of sectors as the basic indicator in planning the production volume and labor productivity and forming the wage fund. As distinct from the gross indicator, this one does not take into consideration the cost of raw materials and goods and thereby makes it possible to determine and gauge more accurately the real results of the work of each sector, association and enterprise. In recent years the indicator of net product (normative) has been officially accepted at a number of enterprise of various sectors and also of two ministries--the Ministry of Heavy and Transport Machine Building and Ministry of Power Machine Building. Taking into consideration the fact that its introduction is something new and complex, the decree stipulates that this indicator will be introduced in planning practice as the corresponding sectors are prepared for this.

A ceiling on the number of workers and employees and targets for a reduction in manual labor will be established among the labor indicators. This is caused primarily by the need for the more rational use of labor resources in connection with the evolving demographic situation and the difficulties of providing the national economy with manpower. There will also be a change in the procedure of planning the wage fund. It will be determined, as a rule, in the form of a norm of expenditure per ruble of output and only in certain sectors as previously, in the form of a general wage fund.

The normative planning of the wage fund has a number of advantages, as experience of its application at certain enterprises shows. It makes it possible to link the amount of the wages more closely with the final results of the work of the enterprise, association and sector and to insure a more correct correlation in the growth rate of labor productivity and wages. At the same time, linking the amount of the wages directly with the amount of manufactured products and not with the number of workers creates conditions for the stimulation of their release and the use of the corresponding saving to encourage those who secure higher labor productivity.

The introduction of new indicators in planning practice requires a great deal of work. It is important to have a profound understanding of their economic nature and the character of their behavior in the course of realization of the plans insofar as at the initial stages the dynamics of certain of them--net product, labor productivity--may differ from the customary ideas about the movement of the corresponding indicators employed previously.

For the purpose of the better substantiation of the planned indicators the decree stipulates that the five-year and annual plans must be elaborated on the basis of economic and engineering calculations and also the data of the certificate of the production associations (enterprises), which should contain information on the availability and level of utilization of production capacities and other technical-economic indicators. This approach is designed to appreciably enhance the quality of the plans, make them taut and practicable and prevent the determination of plan quotas merely in accordance with the evolved dynamics of the corresponding indicators.

The closer linkage in the plans of the targets for the development of production, science and technology and their organic combination is becoming a most important direction of a further improvement in planning and the entire system of management. The decree envisages a wide-ranging system of measures aimed at the comprehensive consideration in the plans of the achievements of science and technology. First, it is planned to formulate programs for the solution of the most important scientific-technical problems and to stipulate therein the final aims, technical-economic results and the times and stages of the accomplishment of the work. Second, plans for an upgrading of the engineering level of the sectors will be established in the ministries' five-year plans. And, third, there will be an expansion of the circle of indicators established for the ministries and enterprises for the development of science and technology, which will incorporate for the first time the indicator of the saving gained from the implementation of scientific-technical measures.

A central problem of planning was and remains insuring the balanced nature of the plans. However, exceptional significance is attached to this problem at present, when the task of an increase in efficiency and quality has been made of paramount importance. First, given the current scale of production and the complications of economic relations, even partial disparities and disproportions can markedly lower the overall efficiency of production and cause the national economy big losses. Second, a lack of balance in the plans objectively strengthens the role of quantitative indicators and relaxes the attention paid to the qualitative indicators of the plan and the product, which holds back the pace of the intensification of production.

The problem of the balanced nature of the plans is, naturally, very complex and crucial work. Its solution is connected primarily with an improvement in balance-sheet work in the Gosplan, Gossnab and ministries and departments and with strict observance of the principle of the complete balance of the plans in their formulation and establishment. Further, it presupposes the precise organization of material-technical supply and the development of the system of economic relations between suppliers, customers and transport organizations. The accomplishment of these tasks, which are envisaged in the decree, is designed to improve the practice of the balancing of the plans at all levels of management of the national economy.

Insuring the rational combination of sectorial and territorial planning is an important task. The decree plans a rise in the level of territorial planning and management in order to insure the more comprehensive development of the economy of each republic, oblast and rayon and to increase the coordination of the activity of USSR ministries and departments, union republic councils of ministers and local authorities in the development of plans. Particular attention is being given to an improvement in the planning and management of the territorial-production complexes in the regions of Siberia and the Far East.

Among the measures to raise the level of planning work envisaged by the decree, a prominent place is occupied by steps to perfect financial planning--an integral and inalienable part of the planning of the country's economic and social development. This is explained by the important part played by financial indicators and norms in the activity of enterprises, associations and ministries and in the balancing of the material and cost proportions of social production. In accordance with the strengthening of the role of the five-year plan as the main form of the planning of the country's economic and social development and the basis of the organization of economic activity, the decree determines measures for an improvement in the practice of forward financial planning at all levels of management of the national economy.

There is an increase in the significance of the state's financial balance. From the 11th Five-Year Plan it will be elaborated as part of the state five-year plan with an annual distribution of income and expenditure. It will cater for the financial reserves essential for the proportional and

balanced development of the economy and the maneuvering of resources in the course of fulfillment of the plans. Together with the elaboration of a financial balance sheet, for the first time in the practice of forward financial planning the USSR Ministry of Finance will devise and submit to the USSR Gosplan consolidated calculations (for the main indicators) of USSR state budget income and expenditure for the five-year period (with an annual distribution), which will be of importance for a more careful determination of the amount of the state's financial resources and the main directions of their use.

The ministries' and departments' elaboration simultaneously with the draft five-year plan and in accordance therewith of five-year plans with an annual distribution and also annual financial plans will be of importance in an improvement in forward financial planning. Corresponding financial plans will also be drawn up by the production associations (enterprises). All this is designed to improve the control of finances in the sectors and at enterprises and create prerequisites for the extensive application of long-term economic norms in planning and stimulation. Particular significance is now attached to insuring the dependability and high quality of the formulation of the forward financial plans of the ministries and departments. The decree broadens the circle of financial indicators established in their five-year plans of economic and social development.

Payments into the state budget and allocations from the budget will also be established together with the indicators of the overall sum of profit and, in certain cases, of a reduction in production costs in the sectors wherein a general norm of profit distribution is determined. At the same time measures are envisaged to insure the stable nature of the forward financial plans. As is known, the five-year financial plans of the ministries and enterprises are calculated in prices of a preplan, base year. They devise the most important financial indicators of the plan of economic and social development, primarily profit. Given annual reviews of wholesale prices, the need naturally arises for a change in the sector's financial plan. For this reason observance of the principle of their stability throughout the five-year plan, which is recorded in the CPSU Central Committee and USSR Council of Ministers decree, is of importance for an improvement in the practice of forward financial planning.

The efficiency of social production and the pace of economic and scientific-technical progress are largely determined by the state of affairs in capital construction. It is still only improving slowly. Capital investments continue to be dispersed around numerous construction projects, the deadlines for the commissioning of many projects are not met, construction is dragged out and as a result the amount of above-norm incomplete construction is growing.

It is primarily the very approach to the planning and utilization of capital investments which is changing. It is intended to plan current production and construction as a unified whole. This means that capital investments should

be allocated the ministries and departments not for new construction in general but for a preplanned increase in products with regard for their maximum possible manufacture in operating production through the more intensive use of its production capacities. Proceeding from this, the capital investments essential for the retooling and modernization of operating enterprises will be allocated on a priority basis in the national economic plan and in the plans of the USSR ministries and departments and the union republics. Capital will be allocated for new construction in the event of the national economy's need for a given product not being catered for at the operating enterprises even after their modernization and retooling. The consistent implementation of this policy is designed to considerably enhance the efficiency of capital investments, limit the front of new construction and reduce the time taken to install projects.

Another, no less important condition of an increase in efficiency in capital construction is the elaboration of a stable plan with the annual distribution of targets completely balanced with resources of materials and production and power engineering equipment and labor and financial resources and also with the capacities of the construction-installation organizations. The changes which are being made to the indicators of the plans of industrial ministries, associations and enterprises for capital construction and also to the indicators of the plan of the construction ministries are also intended to contribute to the accomplishment of this task. Instead of the volume of the capital investments and construction-installation work, the ceiling thereon will henceforward be established in the clients' five-year plans. This means that a limit, as it were, on the expenditure of capital investments for the preplanned commissioning of enterprises, capacities and projects is determined to which both the clients and the contractors must confine themselves. This procedure is intended to restrict ministries' demands for additional capital investments and contribute to the economical expenditure of the funds allocated in the plans and the observance of the estimated costs of construction.

The indicator of the commissioning of production capacities and facilities made ready to manufacture products and render services is made the cornerstone of the planning, evaluation and stimulation of the activity of the construction ministries and organizations. A similar indicator will also be established in the client's plans. The interests of the client and contractor are thus linked up and are oriented toward the achievement of high final results in construction.

Commodity construction output representing the cost of construction-installation work on enterprises, facilities and near-startup complexes made ready for the manufacture of products and delivered to the client is also being introduced in the system of the planned evaluation indicators of the activity of the construction organizations. As distinct from the established volume of construction-installation work, this indicator targets the construction workers in the direction of the commissioning of production

capacities and facilities. Its experimental application in the Belorussian SSR Ministry of Industrial Construction and the Lithuanian SSR Ministry of Construction and in a number of construction ministries and organizations is producing pretty good results. The evaluation of the economic activity of the construction organizations and also economic stimulation will be effected in accordance with the indicator of the growth of labor productivity and profit, and an indicator of a reduction in the prime costs of construction-installation work should be determined for certain organizations.

For the purpose of a more correct evaluation of the work of the construction organizations it is planned to perform preparatory work for a switch in the 11th Five-Year Plan to planning labor productivity in the construction-installation organizations in accordance with the net product, and the wage fund in accordance with the norm per ruble of output.

The orientation of the activity of the construction organizations toward the accelerated commissioning of production capacities and facilities demanded considerable changes in the system of accounts in construction. Accounts between contracting organizations and clients will be settled for enterprises, a near-startup complex, stages and facilities which have been fully completed by construction and commissioned. With the transition to the new settlement procedure contracting organization outlays on incomplete construction will be made from bank credit with the use for this purpose of the funds released from the clients in connection with the transition to settlements without intermediate payments. The clients' payment of advances to the contracting organizations will cease.

Important measures also envisaged for insuring the continuous nature of the operation of the plans of capital construction. For this it is planned, first, to prepare and establish in the five-year plans lists of the enterprises and installations to be started from scratch by construction and also lists of operating enterprises which it is intended to modernize and expand. Second, itemized lists of the construction projects will be drawn up for the entire constant plan document binding on the clients, contractors, planning, financial, bank and supply authorities and equipment and structure suppliers. Third, to finance capital construction continuously; in cases of overfulfillment of the plans the construction projects will be financed in the given year from credit extended in accordance with the plan for granting credit. There will be a simultaneous broadening of the sphere of the use of credit by the production association-clients to pay for large-scale production and power engineering equipment and production facilities.

A most important area of an increase in the efficiency of capital investments is the stimulation of work on retooling and modernization. The decree provides for a number of new terms and abatements. In particular, managers of production associations and enterprises have been given the right to establish itemized lists for this work independently of the total estimated costs of work; to apply in the determination of expenditure on retooling and modernization readjustment sectorial coefficients to the estimated norms in

effect for construction-installation work and to general overhead norms; and to award bonuses to workers of construction-installation and construction organizations and also of production associations for the fulfillment of work on the retooling of operating enterprises in the amounts and in the manner determined for the payment of bonuses for the modernization of enterprises.

Important measures are envisaged for increasing the construction organizations' financial interest in the on-schedule commissioning of production capacities and facilities. The bonuses have been increased to 3 percent (instead of the current 2 percent) of the estimated costs of completed construction-installation work. It is simultaneously established that then the contracting organizations reduce the time taken to commission production capacities compared with the set norms, the general contractor will receive from the client resources in the amount of 50 percent of the envisaged profit for the period by which the duration of the construction was reduced, but not more than 0.5 percent of the estimated costs of construction-installation work for each month of the reduction in the duration of the construction.

A distinctive feature of the measures envisaged by the CPSU Central Committee and USSR Council of Ministers decree is the comprehensive approach to the accomplishment of urgent tasks insuring the concerted interaction of the plans and incentives for an increase in production efficiency and the achievement of high final national economic results. This approach ensues from the directives of the 25th CPSU Congress and is based on the firm foundation of Lenin's teaching on socialist management, which is constantly being enriched by the party in the course of its practical implementation. Measures to improve planning as the main element of the entire system of the management of the socialist economy are combined in the decree with the further development of financial autonomy and a strengthening of the role of economic levers and incentives.

The accomplishment of this task is envisaged on the basis of the application of the following interlinked principles.

First, the development of financial autonomy and economic incentives are organically linked with the five-year plan targets and are constructed on the basis of long-term stable norms.

Second, the strengthening and development of financial autonomy in the basic element of social production--the associations and enterprises--is accompanied by the gradual introduction of financially autonomous methods in the work of the all-union and republic associations and in the activity of industrial and construction ministries.

Third, there is a substantial restructuring of the criteria of an evaluation of the activity of associations and enterprises so that they might reflect the real contribution of the labor collectives to the satisfaction of social requirements and a rise in the qualitative indicators of their work.

Fourth, there is increased interest on the part of the enterprises, production associations and sectors as a whole in an improvement in the financial-economic results of work, and the increase in the resources remaining at their disposal dependent upon the final results of economic activity is guaranteed on a normative basis.

Fifth, there is an increase in the economic responsibility of the enterprises and associations in the unconditional fulfillment of their obligations to the suppliers and the state budget.

In accordance with these principles, the decree determines the concrete mechanism of an activation of the system of financial autonomy and the economic stimulation of production. They concern such important spheres of the vital activity of the enterprises and associations as the formation of incentive funds, mutual relations with the budget in the process of profit distribution and their interest and responsibility in the better use of resources and an increase in labor productivity and product quality.

The procedure of the formation of incentive funds is of paramount significance for the enterprises' financially autonomous activity. Beginning with the 11th Five-Year Plan, it is planned to form the material incentive fund, the social-cultural measures and housing-construction fund and the production development fund in accordance with stable norms established in differentiated amounts for each year of the five-year plan. The material incentive fund will be formed from profit depending on the growth of labor productivity, the production of top-quality products and fulfillment of the plan for product supplies to customers in accordance with concluded contracts. With regard for the particular features of certain sectors, the material incentive fund may also be formed in accordance with other qualitative indicators and, in the extractive sectors, with the growth of output in physical terms. The amounts of the deductions for the social-cultural measures and housing-construction fund will be determined within the range of 30-50 percent of the material incentive fund with regard for the extent of the production associations' and enterprises' provision with housing and social-cultural establishments.

Important changes have been made to the current procedure of the formation of the production development fund. The decree stipulates that expenditure on measures for the engineering improvement of production from this fund will be determined and established independently by the production associations and that they will be backed up on a priority basis with the necessary capital investments, material resources and volume of contract work within the limits set the ministries in the five-year plans. Compared with the current procedure there has been an increase in the size of the reserve formed in the ministries from depreciation allowances intended for major repairs (from 10 to 15 percent of total allowances). This has been done to increase maneuverability in the use of resources for major repairs under the conditions of a varied age structure of the fixed capital at certain enterprises of the sector.

Substantial changes have also been made to the system of profit distribution, which has imbibed, in particular, the positive experience of the work of the Ministry of Instrument Making, Means of Automation and Control Systems. The decree points out that from the 11th Five-Year Plan a stable norm of deductions from profit (differentiated by year) for their disposal will be determined for the industrial ministries (in line with the extent of their preparation) on the basis of the targets established in the five-year plan. This part of the profit is intended for financing capital investments, discharging bank credit and paying off the interest thereon and providing for an increase in working capital and outlays on the development of science and technology, the formation of economic incentive funds and other planned expenditure on the development of the sector.

The transition to the normative method of profit distribution naturally does not mean that the amount of the financing of capital investments is made exclusively dependent on the profit derived by the sector. The initial indicator in a determination of outlays on the development of the sector is the five-year plan target. For this reason the plans of the sectors whose own resources prove insufficient for financing capital investments in production facilities will provide for the use of bank credit and, when necessary, state budget resources.

For an increase in the sector's economic responsibility in the fulfillment of its obligations to the budget the decree stipulates that an absolute sum of deductions from profit into the state budget will be established for the ministries in accordance with the norms in the five-year plans, with an annual distribution. If here in some year of the five-year plan or other the established profit plan is not fulfilled, the ministries will be obliged to make payments into the budget in the full amount at the expense of a corresponding reduction in the resources remaining at their disposal.

The application of the normative method of profit distribution is not reserved merely for the upper level of management of the sector. The ministries are authorized to determine, proceeding from the amount of profit remaining at their disposal and with regard for the particular features of production and the level of profitability, corresponding norms of deductions from profit for all-union (republic) industrial associations and also production associations and large-scale enterprises.

At present there is no practical experience of the normative method of profit distribution at the production association level. There is only little experience of the application of this norm at the Ministry of Instrument Making, Means of Automation and Control Systems' all-union association level. It shows that with the normative method of profit distribution in the associations and at enterprises a number of complex practical tasks arises connected with the considerable fluctuations in their expenditure and income in different years of the five-year plan. For this reason this transition will be effected gradually so that a norm of deductions from profit may be determined for all production associations (enterprises) in line with the creation of the necessary conditions and the accumulation of experience.

An important area of the development of economic levers is a strengthening of their role in the better use of the resources at the disposal of the enterprises and associations. The decree provides for a number of measures aimed at an increase in the stimulating role of the charge on production assets. It is planned to establish the norm of the charge on production assets at 6 percent, as a rule; it is planned to introduce a charge on above-norm uncredited stocks of materials and capital equipment and uninstalled equipment from the profit remaining at the disposal of the associations and enterprises. At the same time, given fulfillment of the production and profits plans with a lesser value of assets than provided for in the plan, the saving on the charge on assets should remain at the disposal of the associations and enterprises, and the obligatory payments to the budget established for the ministry as a whole in accordance with the overall profit distribution norm will be reduced by this amount.

It is planned to introduce a new payment into the budget through production costs--a charge on water. It is intended to stimulate the rational use of water resources by industrial enterprises. This is a major, national economic task.

The decree provides for a further improvement in the system of financing and stimulating the development of science and technology and the speedier assimilation of new products. It is planned to form on a normative basis a unified science and technology development fund from profit in all industrial enterprises. Outlays both for scientific research purposes and for the assimilation of new equipment will be combined in this fund. This will create a sound basis for the comprehensive financing of the entire "science-production" cycle and the necessary maneuvering of resources.

The consistent development and improvement of the system of economic incentives for an increase in product quality is no less worthwhile. As is known, a system of incentive allowances and rebates in relation to wholesale prices is applied even now on the basis of product certification in three quality categories--top, on which the Sign of Quality is conferred, first and second. The additional profit which is obtained from allowances in respect of the wholesale prices of products bearing the Sign of Quality will henceforward be distributed thus: up to 70 percent will go to the economic incentive fund of the enterprises and scientific organizations participating in the manufacture of the high-quality product; the remainder will be shared equally and will go to the unified science and technology development fund and the state budget respectively. At the same time a rebate from the wholesale prices of products of the second quality category of the order of 50 percent of their profit is established. This procedure increases the enterprises' and organizations' interest in the manufacture of high-quality products and, conversely, contributes to the limitation of the manufacture and to the removal from production of obsolete products. To increase the efficacy of this system the decree plans to increase the allowances and wholesale prices of the top-category products and to hold those who cling to the old way more strictly to account.

The impact of economic levers and incentives on an increase in labor productivity and a reduction in personnel turnover is increasing considerably. The transition to the normative planning of wages is opening new possibilities for extending association and enterprise rights in the utilization of and saving on the wage fund compared with the established norms for the additional stimulation of workers and employees for high work indicators, the combination of occupations and professional expertise.

Big economic and social advantages in the correct organization of labor and its remuneration are to be found in the development of the brigade form. This is to be the basic form in the 11th Five-Year Plan. To upgrade its role the brigades have been granted additional rights in an improvement in the organization of labor and the material and moral encouragement of the workers.

Simultaneously with measures to increase financial interest the decree provides for a number of measures aimed at an increase in the economic responsibility of the production associations and organizations for observance of contractual obligations and the timeliness of the supply of products to the customer of the necessary assortment and quality. It has been established that penalties provided for by the law or the contract for a breach of contractual obligations with respect to product supplies must be applied obligatorily without the collection of part payments. Raising the material responsibility of the transport organizations for the nonfulfillment of coordinated shipment plans is also a set task.

Particular mention should be made of the measures aimed at insuring the on-schedule payments for products supplied by enterprises in accordance with concluded contracts and the purchasers' increased responsibility for the observance of payment discipline. The decree stipulates that when payment is due and the purchaser temporarily lacks funds, the invoices accepted by him will be paid by the USSR Gosbank or Stroybank through loans with the indebtedness being referred to the purchaser and with it being discharged within a period of up to 60 days in the order of priority determined for the payment for physical commodities and with its recovery at an annual rate of 5 percent. Upon the expiry of the said period, the extension of credit will be continued with the collection of increased interest.

The implementation of the measures envisaged in the CPSU Central Committee and USSR Council of Ministers decree requires high organization of work at all levels of management of the national economy. We have to draw up a large number of legislative instruments and methods documents. This work is now in full swing since a number of provisions of the CPSU Central Committee and USSR Council of Ministers decree are to come into force in 1980. Their introduction in comprehensive fashion will begin with the 11th Five-Year Plan.

The financial authorities have a crucial part to play in the practical implementation of the measures to improve planning and strengthen the impact

of the economic mechanism on production efficiency and quality. In conjunction with other departments the USSR Ministry of Finance is performing a great deal of work on preparing a number of legislative instruments and instructions connected with the organization of five-year financial planning in the ministries and at enterprises and with the new procedure of profit distribution and the financing of construction. Much also has to be done by the local financial authorities. One of their main tasks is the assimilation and consistent practical application of the new methods of planning and economic incentive; and the strengthening of economic and checking work aimed at the achievement of high production efficiency and an improvement in the operation of enterprises, associations and organizations of all sectors of the economy.

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STANDARDIZING AUTOMATED DATA PROCESSING SYSTEMS

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[Article by E. Vanags: "Development of a Standard Automated Data Processing System for an Administrative Region in the Latvian SSR"]

[Text] Work is being conducted in the Latvian SSR on creating a standard automated data processing system (ASOD) of an administrative region. This system is being planned as a component of the Nationwide Automated Data Collection and Processing System for Accounting, Planning, and Managing the National Economy (OGAS). In December 1978 the first section of this system was put into industrial operation.

The ASOD of an administrative region is being established in order to improve and raise the quality of managing the administrative region as a whole as well as the region's enterprises and organizations, i.e., the regional management bodies as well as the enterprises and organizations which are located on the region's territory will be automated facilities. The organizational and technical base for the ASOD of an administrative region is the Regional Data and Computer Center (RIVTs) for State Statistics, which is supplied by ES EVM [Integrated Computer System] with a broad array of peripheral equipment. Inasmuch as the RIVTs's are not being created in all administrative regions but only in the centers of economic regions which encompass 3-4 administrative regions on an average, the technical base of one RIVTs is intended to introduce ASOD for all the administrative regions which are included within a given economic region.

The objective necessity for and the feasibility of creating ASOD for an administrative region is based on the following. In a rural administrative region of the Latvian SSR, as a rule, only a RIVTs for State Statistics operates and will operate in the future. It has not been proposed to create computer installations, subordinate to other ministries and departments, in an administrative region. In connection with this, the RIVTs's for State Statistics must service all the ASU [Automated Control Systems] of a region's enterprises and organizations, as well as mechanize and automate individual accounting and computer operations for enterprises and organization in which ASU's have not been created.

In uniting all the ASU's of a region's enterprises and organizations into an integrated territorial automated system, great possibilities open up for applying general-systems and standard planning solutions, ensuring precise interaction among the ASU's. Thus, expenditures for developing and operating ASU's are reduced, while the functional efficiency of the RIVTs's for State Statistics is increased.

Inasmuch as the ASOD of an administrative region in the Latvian SSR has been developed as a standard system, the role of the system's clients is being played by the ministries and departments whose enterprises and organizations are located on the territory of the administrative region as well as enterprises of Union jurisdiction. The chief client of an administrative region's ASOD is the TsSu [Central Statistical Bureau] of the Latvian SSR, and its chief developer is the Latvian Section of the NII TsSU [Scientific Research Institute of the Central Statistical Bureau] of the USSR.

In order to examine general-systems questions and to coordinate operations, an Interdepartmental Coordinating Council was established for developing an administrative region's ASOD. Proceeding from the characteristics of ASOD at the time of its creation, it is important to observe the principle of applying standard planning decisions and to take into consideration the system's uninterrupted development. Specific to a regional automated system are the principles of combining centralized and decentralized data processing and the allowability of varying degrees of automation in data processing.

If in the development of inter-sectorial and departmental ASU's the application of standard planning decisions (TPR) are desirable, in the ASOD of an administrative region it is mandatory. Here the application of TPR not only increases labor productivity and the planning quality but also is a necessary condition for the effective functioning of the RIVTs. Both the support and the functioning part of the ASU are standardized along with methods of developing them.

Standardization of the support component is carried out basically by means of applying block- or package-type planning. Block-type planning includes creation of the components of an integrated data base of the ASOD of an administrative region (integrated classifiers, raw data, tabular forms, and norms) as well as standard engineering instructions. Serving as an example of package-type planning could be the standard engineering processing, providing for different variants of this processing. The task of the planners amounts to selecting the most suitable standard engineering processes for solving a specific problem.

As a result of the large number of ASU's in an administrative region and their differences there is practically no possibility for creating an integrated data base for a regional automated system with respect to all parameters. Nevertheless, that part of the data base which is common to

the enterprises and organizations of many ASU's must be developed in a centralized manner. For example, at all the ASU's of enterprises and organizations which are part of the ASOD of an administrative region use can and should be made of integrated (All-Union, republican, or regional) classifiers of enterprises and organizations, facilities of an administrative-territorial division, industrial and agricultural products, makes of automobiles, groups of taxpayers, and so on.

In the ASOD of an administrative region in a number of instances it is feasible to set up an integrated normative system for the various enterprises and organizations; this reduces the volume of data which is stored in magnetic memory. For example, in processing data with regard to the operation of freight truck transport integrated norms could be utilized for automotive transport, industrial, construction, trade, agricultural, and other enterprises with regard to drivers' wages, fuel expenditure, amortized deductions for automotive transport, etc.

In order to standardize the functional component of an ASU, a modular design has been proposed wherein those parts of the plans would be developed as standard which could without changes be introduced into many ASU's of enterprises and organizations, while the remaining parts are developed individually in the process of planning each ASU. A standard module is based on an integrated algorithm for solving the individual parts of the problem. For example, in automating the accounts of labor and wages for all enterprises and organizations integrated algorithms could be utilized for computing hourly wages, the calculations and deductions of taxes, the calculations and withdrawals with regard to performance records, etc.

In order to develop and introduce TPR's [Standard Plan Solutions] in the Latvian SSR under the Inter-Departmental Coordinating Council for Developing ASOD in an Administrative Region, inter-departmental working groups are being set up for the purpose of standardizing the functional sections of the ASU's. Since the ASU's of enterprises and organizations which are included within the ASOD of an administrative region are, at the same time, also a lower unit of the corresponding intersectorial and departmental ASU's, the development and introduction of TPR's on the regional level stimulates standardization on the republican and Union levels. Thus, it has been proposed to guarantee the interrelationship of the ASOD of an administrative region with the republican and Union levels of OCAS [Nation-wide Automated Control System].

In connection with the fact that a large number of developers are required for the regional automated system, it is important that they all utilize the same methods of planning. In this regard the Latvian Section of the USSR Scientific Research Institute of the TsSU has prepared a methodology for developing technical working drafts for solving problems in the ASOD of an administrative region.

This methodology provides for a precise demarcation between developing general-systems and individual planning decisions, the formalization of

work on the planning and extensive utilization of standard forms for completing draft plans (code descriptions, raw data, masses of data, tabular forms, calculations of the economic effectiveness of machine data processing, and so on).

Those draft plan elements (primarily with regard to the support component of ASU's), which may be the same for all the ASU's of enterprises and organizations, are included in the general-systems technical and working drafts for developing ASOD in an administrative region, and they are becoming mandatory for all ASU's.

Materials of general-systems technical and working drafts are being utilized in working out individual technical-working plans by tasks. The use of standard forms has facilitated the creation of plans which are similar in form; it has also freed planners from choosing a form to set forth their draft plan solutions and has reduced labor consumption and expenditures on planning as well as on introducing plans. For example, in using a standard form for calculating economic effectiveness, a planner is not required to make a special study of the methods to determine economic effectiveness. All he has to do is fill out the standard form in all its points and make his calculations in accordance with the formulas which are printed on this form.

The methodology for developing technical working plans for solving problems in the ASOD of an administrative region provide for the formalization not only of the format of plan solutions but also of the process of planning itself. In the form of an enlarged bloc-schematic, an algorithm is cited for developing technical working plans which reflects the sequence of operations in accordance with the planning. For each operation of the bloc-schematic mentioned above a detailed algorithm is furnished, or brief directions are given as to how to fill it out. Herein the maximum use of standard plan solutions is provided for.

The principle of combining centralized and decentralized data processing means that despite the fact that the RIVTs of the State Statistics is the organizational and technical base of ASOD, this does not exclude in certain cases centralized data processing for the region's enterprises and organizations on the republican level of the RASU [Republican Automated Control System] of Latvia. Moreover, the centralized data processing may be complete, when all the tasks of a specific enterprise or organization in the region are handled in the departmental VTs (Computer Center), located in Riga, or it may be partial, when a portion of the tasks are handled in the RIVTs of State Statistics and another portion at the republican level of the RASU of Latvia.

The complete centralization of data processing is justified in those instances when the functions of an enterprise (organization) are extremely specific and when the solution of the enterprise's (organization's) problems requires its own standardized data, the creation of which would be unfeasible in each RIVTs. For example, complete centralization of data

processing has been provided for in the OASU of the Ministry of Social Security of the Latvian SSR as well as in the automated system of financial calculations (ASFR).

In those instances when a more powerful computer is needed to solve problems than those which the RIVTs of State Statistics has, or when highly skilled specialists of ministries, departments, scientific research institutes are necessary to solve a problem, or when the basic data used to solve a problem is needed not only for the regional but also for the republican level of the RASU of Latvia, a partial centralization of data processing is provided for, i.e., the solving of individual problems in the departmental VTs. For example, data on each construction project are necessary on the regional as well as on the republican levels, and, therefore, a list of construction projects has been compiled at the Main VTs of National Economic Planning and Management of the Latvian SSR, and it encompasses construction projects throughout the entire republic.

An essential characteristic of the ASOD of an administrative region consists of the fact that for various enterprises and organizations of the region a varying degree of mechanization and automation of data processing may be justified from an economic point of view. This is linked with the fact that in an administrative region of the Latvian SSR there are comparatively few large-scale enterprises and organizations and more medium-sized and small enterprises and organizations, in which the creation of ASU's is not feasible from a practical point of view. For these enterprises machine data processing may be introduced in the following two basic modes: using small or mini-computers, or using key-type adding machines; to solve certain problems computers may be used (particularly in those cases where there are standard plan solutions for the given problems and they have already been solved in RIVTs's for other enterprises and organizations).

It must be emphasized that solving individual problems on the computer for medium-level and small enterprises and organizations does not contradict the principle of a systems approach. The above-mentioned principle requires not a mandatory solution of all problems on high-speed computers but rather the maximum coordination of problems regardless of the help they receive from whatever technical means. Thus, we must take into consideration the fact that ASU's will not be introduced at too many of a region's enterprises and organizations. But in order to achieve full integration of data processing on a region-wide scale, provision must be made for an inter-relationship among all the enterprises and organizations in the region, irrespective of the degree of mechanization and automation of the data processing within them.

In the first place the ASOD of an administrative region solves problems for the local organs of state statistics, agricultural enterprises, the regional consumers' union, and so on.

A special position in the ASOD of an administrative region is occupied by the ASOD's and the local organs of state statistics, which are furnished with statistical data by the directive and other regional organs of administration. Of the greatest interest is a complex of problems dealing with the mathematical and statistical analysis of agricultural production, as well as problems at the regional level of the sub-system of capital construction statistics of the ASBS [Automated System for State Statistics], which can be solved on the basis of a centralized ABD [Automated Bloc Data].

The principal goal in solving a complex of problems dealing with the mathematical and statistical analysis of agricultural production consists of improving and deepening the analysis and appraisal of the operation of individual enterprises.

Up to now models have been developed and introduced for analyzing the crop yields of grains, potatoes, and perennial grasses used for hay, as well as the production costs for grains and potatoes, the average milk yield, the production costs for milk, and gross income.

Solving regional level problems of the sub-system of capital construction statistics of the ASGS is carried out on the basis of the centralized ABD, meeting the needs of the ASGS, ASPR, and OASU. The basis of the "Capital Construction" Centralized ABD consists of a list of construction projects, in which are stored the constant criteria for construction, the data of the draft planning and estimate documentation, planning and accounting indicators, as well as the operational data for a newly created enterprise.

The functions of gathering accounting and current plan data are carried out by the RIVTs (RIVS) of state statistics. The preparation of machine carriers is also performed there. Data prepared on punch tape from the RIVTs (RIVS) of state statistics is transmitted to the Republican VTs of the TsSU of the Latvian SSR; from here after additional control and re-transcription onto magnetic tape it is sent to the Main VTs for National Economic Planning and Administration. Output statistical data is formulated with regard to such fundamental cross sections as types of financing, sectorial jurisdiction, purpose of facility, and so on.

In working out a composite accountability for a region on the basis of a centralized ABD the possibility appears of obtaining such new indicators as the following: coefficient of technical preparedness, construction lag, number of construction projects (including start-up, ongoing, and newly begun ones), specific capital investments per unit of capacity introduced, the efficiency and pay-off period of capital investments, etc.

Ranking first for the ASU of the region's agriculture are tasks providing for the automation of computing optimum plans with regard to the development and distribution of agricultural production and development of standard feed rations for livestock.

With regard to the volume of data being processed the largest complex of tasks for the top priority of an administrative region's ASOD is the integrated livestock-raising system known as "Seleks" (selective breeding, savings, system), which encompasses the breeding record of cattle. As a result of the computerized data processing specialists obtain the necessary operational, analytical, and forecast information. The creation of the "Seleks" system has eliminated the manifold duplication of data streams, increased labor productivity, and reduced the time periods required to obtain the necessary indicators for managing production; in the final analysis, this has facilitated increased livestock production.

At the present time in the Latvian SSR work is proceeding on the creation of a second phase of ASOD for an administrative region, which, based upon the example of the Valmiera Rayon plans are afoot to create ASU's in such enterprises and organizations as a dairy combine, a land-reclamation and construction administration, and others. The principal difference between the second stage and the first is that most of the complexes of problems will be solved at an integrated data base, organized in the form of a territorial ABD.

Because of the widespread utilization of integrated classifiers, unified primary and composite documentation, and standardized technical processes of data processing, we may organize large masses of data for various enterprises and organizations (for example, in automating the accounting of the movement of goods and materials, computations with suppliers and buyers, accounting of procurements of agricultural produce). This will allow the elimination of duplication in the preparation of machine-type data carriers and in the processing of the same data for various users of RIVTs.

In the operation of the second stage of ASOD of an administrative region, there will be a qualitative change in the portion of the problems introduced within the framework of the first stage. For example, the initial data necessary to solve the complex of problems of the mathematical and statistical analysis of agricultural production is written out from the annual reports of kolkhozes and sovkhoses onto special forms from which the data is transferred onto punch cards. Such an operation is labor-consuming, but it is still necessary, inasmuch as it is practically impossible to carry out selected punching directly from the tables of the annual reports. In determining the composition of the indicators in the list of agricultural enterprises created within the framework of the second stage, the needs of the complex of problems of the mathematical and statistical analysis of agricultural production were taken into consideration. Therefore, after the introduction of a given list it will be possible to obtain the initial data from the list, and the manual labor of writing out the data from the annual reports and transferring it to the machine-type carriers will be eliminated.

The introduction of ASU's at all enterprises and organizations in which their creation is economically justified will allow the maximum integration of data processing to be ensured on a region-wide scale. Enterprises

and organizations employing the services of RIVTs will not have to fill out certain forms of statistical accountability since these will be compiled in the RIVTs and issued in the form of tables.

In the plans for automating bookkeeping at kolхозes and sovkhoz~~es~~, provisions have been made for new preliminary documents and codes which will permit all forms of accounting to be integrated. It is already possible to use the prepared draft documents to compile on the computer statistical reports with regard to Forms No 1, "A Report on the Presence of Seeds for Spring Crops," No 10, "A Report on the Presence of Seeds and Planting Material," No 24, "A Report on the Status of Livestock Raising," No 14, "A Report on Calculations with Kolkhoz Workers Concerning Wages," No 15-T, "A Report of a Sovkhoz on the Number of Workers and the Expenditure of Wage Funds," and others. In this way there will be a reduction in expenditures for filling out statistical reports at enterprises and organizations and in their processing at RIVTs, and, most importantly, there will be an improvement in the quality of statistical data.

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BETTER REPAIR SERVICES AT SHCHEKINO PLANT DESCRIBED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 10, Oct 79 pp 62-66

[Article by B. I. Lur'ye, chief engineer of the Order of Lenin Shchekino Nitrogen Association, and I. M. Radzin, deputy chief mechanical engineer: "Improving the Organization of Repair Services"]

[Text] Beginning in 1967, the Nitrogen Production Association has been working on a planned basis on improving the economic experiment aimed at increasing product output with a simultaneous reduction in the number of personnel and a strengthening of material incentives for the workers. Over these 11 years, the production volume at the association has risen by 3.1-fold with a reduction of 1,665 in the number of employees. Labor productivity has increased by 4.1-fold and average wages by 55 percent.

An inseparable component part of the experiment is an improvement in the organization of the repair subdivisions. Our constant attention to them is motivated by the fact that they have an enormous influence on the volume of salable product, labor productivity, costs, fixed capital utilization, and so forth.

As a result of the full production mechanization and automation at our association, as at many of the enterprises in the chemical industry, fewer industrial production personnel is directly employed than in the servicing of production, for example, in the shops of the monitoring-metering equipment and automation [KIPiA], the repair and power subdivisions, the transport-warehousing system and others (a ratio of 39 percent and 61 percent).

The decentralized repair services did not provide an opportunity to maneuver the labor force and spare parts. Due to the scattering of the repair subdivisions it was difficult to create the necessary physical plant and a precise system for the planning and accounting of the actual value and labor intensiveness of repair work. Serious impediments arose for carrying out the economic experiment.

Our experience has shown that the problems of the centralization and specialization of the repair services must be approached on a strictly individual basis, considering the specific features of the production methods, the actual types of equipment and even the existing traditions.

The advantages of the centralized subdivisions are felt most in repairing large units. These involve the possibility of maneuvering the labor force and spare parts, and a precise system for planning and accounting for the actual cost and labor intensiveness of the repairs. In repairing a large amount of comparatively small equipment, better efficiency in the work is achieved by specialized brigades which are part of the production shops.

It is important to find the most efficient combination of centralized subdivisions whereby it would be possible to obtain a good result with the least number of personnel.

At our association all the repair subdivisions have been centralized as part of the services of the chief power engineer and the chief instrument engineer, while the decentralized ones are part of the service of the chief mechanical engineer.

The service for the major overhaul of monitoring and metering instruments and automation was centralized at our association in 1968. At that time almost one-half of the specialists in the given area was transferred from the basic shops and production to the KIPiA shop. The new service assumed the major overhaul and testing of instruments and regulators, the elaboration, improvement and introduction of new KIPiA systems, the supervision of metering equipment, the transporting of instruments through the shops and production lines, and the other most general and complicated functions.

The servicing, preventive and routine repairs on instruments and automation were performed by duty electricians who remained in the shops. But, as practice showed, this made it difficult to carry out a uniform technical policy in the area of production automation. Inevitable differences of opinion arose along with a lack of coordinated actions, a duplicating of functions and a lowering of responsibility. For this reason, in the course of the economic experiment, in 1975, we again had to return to the KIPiA service and complete its full centralization. All the duty electricians were removed from the basic shops and put under the newly created shop for operations and routine repair on the KIPiA. This made it possible to deepen specialization and increase labor productivity by 2.2-fold. Due to reducing the number of personnel, the economic effect was around 150,000 rubles.

Analogous centralization was also carried out in the power service. Its personnel was also taken away from the production shops and concentrated in two specialized ones, power supply and the electrical shop, both under the chief power engineer.

The service of the chief mechanical engineer has as part of it a centralized repair system and specialized repair subdivisions in the repair shops.

The repair system includes the following shops: For the overhaul of deep freezing units and compressors; for the overhauling of high-pressure units and piping for ammonia and methanol production and the carbomide shops; a major overhaul shop concerned with the modernization and major overhaul of equipment for the entire association; a shop for the centralized repair of piping and anticorrosion coverings and a boiler machine shop which manufactures spare parts, chemical and nonstandard equipment.

Some 60 percent of the repair personnel are concentrated in the centralized repair subdivisions of the service of the chief mechanical engineer. The relationships and contacts of the centralized shops with the production ones are regulated by a special statute and the job instructions.

Due to specialization and centralization there has been better use of the workers, and the equipment down times in repair have been shortened. At present there is a possibility of concentrating the maximum efforts of the repair workers on the units which determine production capacity.

It must be pointed out that the association also uses the services of specialized repair trusts which have been set up under the ministry of the chemical industry, particularly in carrying out major overhauls.

The shortening of the down time of basic equipment during repairs in recent years has been from 15 to 25 percent in comparison with our plan. The quality and completeness of the repairs performed have increased. With decentralized repairs, the chief of the production shop together with his mechanic organized the repairs and was responsible for their time. For this reason often a desire arose to fulfill the schedule by reducing the amount of repairs or lowering the quality. Now the chief of the production shop will not accept the equipment from the repair workers until the work has been carried out completely.

An important factor is the more precise delimitation of personal responsibility for the engineers and technicians in the stages of operating and repairing the equipment (for example, responsibility for the proper condition and safe operation of pressurized equipment).

Also of enormous significance is the fact that an opportunity has appeared to carry out a uniform technical policy in introducing new progressive materials in repairs, and because of this to raise the operational reliability of the equipment.

The high level of specialization in terms of the types of repairs has contributed to a rise in worker skills and labor productivity. For example, output per worker in the specialized section for repairing deep freezing

units increased by 70 percent in 1977 in comparison with 1967. Of equal importance are the technically based work standards, the combining of professions and the rise in the level of mechanization.

Beginning with 1968, on the basis of the calendar plans, work has been done to revise and replace the obsolete and understated experimental-statistical standards for repair work with technically sound ones. Having reached the greatest scale in 1975 in converting to the new wage conditions, this has been further continued. While the proportional amount of repair work being normed by technically sound time rates in 1967 was around 25 percent for the association, in 1977 the figure was 78 percent, and in the first half of 1978, 80 percent.

The bonus provisions for the workers of the repair services have been adjusted and partially revised. The basic conditions for receiving bonuses from the wage fund are:

- 1) The fulfillment of the monthly normed quotas;
- 2) The quality of the repair and the passing of inspection upon first submission;
- 3) The fulfillment of the schedules for planned preventive repairs with the compulsory fulfillment of the monthly plan as a whole for the shop.

A large number of repair workers has two and more professions. The most characteristic examples of combining professions are: Mechanic for the repair of production equipment and sling operator, gas and electric welder and equipment repair machinist, machinist-crane operator, lathe operator-machinist, loader and operator of battery-operated plant trucks, duty electrician and electrician of the KIPiA, and repairman and tool worker.

What has been the economic effectiveness of improving the repair services? Unfortunately, there are no strict methods for calculating the economic dependence of basic production upon the quality and economy of repairs. The determining of this dependence, in our opinion, is one of the important tasks of economists.

If one uses the method proposed by the director of the Center for the Scientific Organization of Labor in the Chemical Industry, S. A. Yefremov (see EKONOMIKA I NOT V KHIMICHESKOY PROMYSHLENNOSTI, No 8, 1972), then it is possible to calculate the amount of profit obtained in basic production as a result of reducing outlays in the repair system and shortening equipment stoppages during repairs because of the more advanced organization of repairs, as follows:

$$P = (S_R^b - S_R^r) \cdot V^r,$$

where P --profit;

S_r^b --expenditures on repair and maintenance per ruble of sold product in base year (9.7 kopecks for us in 1968);

S_r^r --expenditures on repair and maintenance in report year (9 kopecks in 1978);

V^r --the volume of sold product in the report year (182 million rubles).

With such a calculation method, the profit obtained as a result of reducing expenses in the repair system for the association in 1978 was 1.27 million rubles.

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SPECIALIZED GROUP SERVES MATERIALS HANDLING IN TRACTOR INDUSTRY

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 10, Oct 79 pp 66-73

[Article by Yu. P. Inin, general director of the Volgograd Complex Scientific-Production Association: "On the Basis of a Long-Term Program"]

[Text] In tractor and agricultural machine building, the organizational and technical level of transport-warehousing and materials handling work is being improved on the basis of long-range programs. The center of them is the full mechanization of this work, and with the growth and development of production this is assuming ever greater significance as a factor for raising the continuity level of the production process.

The ministry has approved two important documents "A Management System for the Development of the Transportation and Warehouse System and for Raising Its Technical Level" and a reporting form for the plants and production associations for materials handling and transport-warehousing work (form 1-TS). These have provided compulsoriness, clarity and planning in carrying out the program. The system regulates the work procedures on the problem and the responsibility for them on all executing levels: the functional administrations of the ministry, the all-Union industrial associations, the design and engineering organizations, the production associations and enterprises of the sector. Form 1-TS provides an opportunity to supervise the fulfillment of the plan quotas for the basic indicators of the organizational and technical level of transportation and warehousing work, and on the basis of studying the obtained objective data to forecast the development trends and plan long-range measures.

The Complex Scientific and Production Association holds an important place in the operation of the system, as this is the head organization of the ministry for the problem of the full mechanization of transportation, warehousing and materials handling work. The association includes the following: the Volgograd Design Institute for Automation and Mechanization as the head organization, the Volgograd Specialized Design Bureau, the Mekhupakovka [?Mechanized Packaging] Specialized Design Bureau, the Experimental Design Bureau, the Volgograd Experimental Plant, the Volgograd

Experimental Plant for Mechanization Equipment, and the Il'yevskiy Experimental Plant. The NPO [scientific and production association] carries out all stages of the "research--production" cycle, including scientific research and experimental design work, the designing of transportation and warehousing systems and full mechanization systems for materials handling work, the development and manufacturing of nonstandard equipment, the introduction, compilation of procedural instructions and recommendations, and forecasting. Over the 3 years of the Tenth Five-Year Plan, an economic effect over 15.4 million rubles has been achieved from the work of the NPO which has been completed and introduced. This is almost 2-fold more in comparison with the corresponding period of the Ninth Five-Year Plan. In relative terms over 12,000 workers have been released from heavy manual labor. What are the basic areas of our development?

The introduction of mechanized baled and container shipments is one of the primary problems related to raising the organizational and technical level of the production transport and warehousing complex. Over the 3 years of the Tenth Five-Year Plan the volume of baled shipments for the sector has risen by 1,558,000 tons, and the economic effect was 1.6 million rubles. Baling has been introduced most widely at the Khar'kov Tractor and Foundry plants, the Cheboksary Unit Plant, the Rovno Spare Parts Plant, the Orenburg Radiator Plant, and elsewhere.

With the supplier plants, the Khar'kov Tractor Plant has developed baled delivery of the most mass types of freight such as castings, stock and assemblies with a total volume of around 90,000 tons. This has not only solved the problem of mechanization and releasing workers from heavy manual labor in handling crated piece freight, but also to a significant degree has made it possible to raise the technical level of the transportation and warehouse system, to bring the mechanization of materials handling work up to 90 percent, and to more efficiently utilize the highly mechanized warehouse complex with an area of 17,000 m², where it is possible to store 50,000 bales of various freight simultaneously.

The very idea of baling or consolidating the freight unit for the possibility of mechanizing the freight handling process, is not a new one. Baling was first developed in our nation at the Novosibirsk Institute for Railroad Transportation Engineers in 1936. For a number of reasons this was not widely developed in the prewar years, and the beginning dates back to the end of the 1950's. But these were particular insignificant solutions which did not possess a system or show up on the national economic level. Only at the beginning of the 1970's was the question raised of baled shipments on a nationwide scale. Our institute was involved with this question somewhat earlier, and by the start of the 1970's, we already had certain developments.

The baling of freight is not only a technical aspect of the question but also an organizational, production and legal one. There are many aspects to it. In being concerned fully with the problem, we have realized that

it was necessary to create a system and not merely solve local questions. For this purpose we worked out the "System of Through Baled Shipments" which was approved by an order of the minister. This same order stipulates specific quotas for more than 120 enterprises in the sector for each year of the current five-year plan in terms of the volume of baled shipments, the economic effect, the release of workers from manual labor, and the manufacturing of baling equipment.

The system provides an answer to the following technical and production questions: How, where and with whose help the bale is to be made up, with what mechanical equipment it is to be loaded, transported and unloaded. And baling has been introduced as a compulsory final operation in the basic production methods at an enterprise.

An organizational decision has been formulated in the form of a "Statute on Baled Shipments" which eliminates many complexities in the relationships of the partner enterprises. For example, in baling a whole series of devices arrives along with the freight from the supplier to the consumer of the product. Subsequently these must be returned. But there were some who did not wish to be involved with this. But as soon as the "Statute on Baled Shipments" which was worked out incidentally by our NPO had been approved by an order for the ministry, the problems of returning the baling reusable devices, the dates, the responsibility and penalties were eliminated. Other organizational and legal questions were also clarified. The Complex NPO as the head organization for baled shipments has been given the corresponding rights in settling legal and technical questions. Without our ruling the ministry arbitration commission will not accept for review claims by the enterprises related to baled shipments. Of course this work is complicated and takes up a good deal of time, but we are aware that it is indispensable.

Baled shipments are an interdepartmental and national economic problem, and undoubtedly not all the questions can be settled within the ministry alone. In shipping freight under subcontracting arrangements within the ministry the system of baled shipments works smoothly in the sector. But we immediately encounter difficulties as soon as we begin to settle the question of organizing and extending baled shipments of spare parts for farm machinery to USSR Sel'khoztekhnika or the receiving of freight in bales for our enterprises and delivered from other sectors.

A number of compulsory documents of the Ministry of railroads, the USSR Gosstandart [State Standards Committee], Goskomtsen [State Price Committee] and Gossnab run contrary to the development of baled shipments, and impede this. Responsibility has not been provided for the Ministry of Railroads for returning baling equipment, and rates have not been worked out which would encourage this type of shipments. Difficulties have arisen over the demand of the Goskomtsen to provide a rebate on the wholesale price in the event of excluding the use of wooden crating. In introducing a baled shipment in the place of using wooden crating, the supplier

loses in the amount of gross product and sales. For example, the Volgograd Plant for Tractor Parts and Units alone in shipping 80,000 tons of products in bales, the crating of which would require 14,000 m³ of wood, loses 437,000 rubles in sales.

There are also other factor which impede the development of baled shipments, for example, each enterprise is forced to make its own baling equipment. Obviously the time has come to standardize and unify the baling equipment and organize its centralized manufacturing.

The role of internal plant transport as a means of ensuring the continuity of the production cycle, is also immeasurably growing. In the intershop freight flows of a number of enterprises, extensive use is being made of the standard systems developed by the association for mechanizing through movement of the freight in reusable standardized box trays. The combining of the centralized mechanized delivery of freight from the warehouse with a stub wage system for the drivers has proven effective. Such methods for organizing freight movements are used at the Serp i Molot Plant in Saratov, the Tula Combine Plant, the Kishinev Tractor Plant, and others.

Another major factor in increasing the level of production continuity is the mechanizing and automating of the processes of moving and storing parts and assemblies in their manufacture in flow lines. The NPO has prepared recommendations and guiding technical materials on the standardizing of interoperation movements in flow lines using mechanization for the press, assembly-welding, machine and other shops. These ideas are widely used at the Kherson Combine Plant, the Vinnitsa Tractor Unit Plant, the Minsk Gear and Tractor plants, Rigasel'mash [Riga Agricultural Machinery Plant], the Lozovskiy Mechanical Stamping Plant, and others.

The greatest effect is achieved by using an interoperation overhead conveyor transport combined with light lifting and loading devices. One of the examples of successfully implementing such plans is the crankshaft and clutch shop at the Khar'kov Tractor Engine Plant. The system developed by the NPO includes 22 overhead conveyors with multiple tray hangars assigned to definite operations. The hangars at the same time are the accumulators of the operational stock. The conveyor is loaded and the parts are taken off using light lifting devices. The necessary work pace has been achieved on the lines, heavy manual labor has been eliminated for 450 machine tool operators and transport workers, and labor productivity has risen by 10-15 percent.

In the machining and press shops, the mechanizing of the collection and transporting of chips and scrap metal is of important significance. Our association has developed and is manufacturing at its plants standardized chip-collecting conveyors, automatic opening and tilting crating, and grabs for it. Over the 3 years of the Tenth Five-year Plan, 250 units of these conveyors have been introduced, and the annual economic effect from this is 400,000 rubles.

The mechanized transport for chips and scrap metal can operate most successfully when these devices are combined into a single system with the machine tools. But a majority of the types of machine tools lack devices which would deliver the chips from the machine tool to the conveyor. The Ministry of Machine Tool and Tool Building Industry as yet is slowly solving the question of equipping the machine tools with such devices.

Present-day trends in the servicing of production involve the creation of transport and warehouse complexes. The warehouse has ceased to be simply a storage area. It is linked with all the processes of receiving materials and preassembles parts, their preliminary preparation and delivery to production.

Our NPO has worked out a range of standard plans for such warehouses both for location in separate-standing buildings and inside the shops. Over the 3 years of the Tenth Five-Year Plan, at the plants of the sector 259 mechanized warehouses have been introduced with a total area over 504,000 m². In 1978 this made it possible to bring the proportional amount of mechanized warehouses up to 56 percent of the total volume of warehouse area.

The experience of the Tashkent Parts Plant is characteristic. Here mechanized warehouses have been organized as part of the transport system which links them with the production sections. The standard prefabricated warehouse sections, the stacker cranes, the standardized box trays, the standard mechanical equipment as well as the overhead monorails and conveyors developed by our NPO are widely used as mechanization. As a result the plant has been able to largely solve the problems related to the elimination of manual labor. Here the level and degree of mechanizing materials handling and transport-warehousing work are the highest in the sector.

The development of highly mechanized transport and warehouse complexes requires new management methods. Here the main area is the centralizing of the means of transport and the servicing of production by assigned routes. The warehouse system is being converted to a shop structure. Because of this the warehouse is being turned into an equal partner of the shop. Over the past years of the Tenth Five-Year Plan, the shop management structure for the transportation and warehouse system has been introduced at more than 60 percent of the enterprises in the sector.

The solution to the problem of full production mechanization and automation is related to the development of efficient equipment. The NPO has developed a system of machines which encompasses the basic processes of moving freight, and is developing mechanical equipment which is not produced by the enterprises of the specialized ministries or is turned out in limited quantity. For example, in 1979, series output was started of rocker-arm manipulators with automatic equalizing of the load, boom-design rack stacking cranes with addressing, and other progressive equipment. But we must also manufacture the standard mechanical equipment as

the specialized ministries are not meeting the demands of the sectors. For successfully carrying out the work in the area of the full mechanization of transport, warehousing and materials handling work, it is essential to expand the centralized deliveries of internal combustion engine and battery operated plant trucks, overhead conveyor systems, including pushers and monorails with automatic addressing, stacker cranes for long freight, automatic scales, and so forth.

When we began to investigate the mechanization of transportation, warehousing and materials handling work on a comprehensive basis, we saw that in solving these problems the questions of packing and mothballing were of great significance. The NPO set up a specialized design bureau for solving these problems.

It is worth presenting them separately here. They are described in this issue by Yu. I. Dubrovskiy, the head of the laboratory for forecasting and technical and economic analysis at the NPO. In conclusion, I would like to take up two other questions which, in my view, should interest all sectors.

Personnel. Who should train the engineer personnel for the mechanization and automation of transportation and warehousing work? This is a serious problem requiring definite engineering specialization! The largest number of specialists is turned out by the Voroshilovgrad Polytechnical Institute, a few by the Volgograd Institute and possibly two or three other VUZes. Clearly this is insufficient. Industry is experiencing a true hunger for such specialists.

A standard procedural approach. According to the methodology established within the ministry for the reporting and analysis on the level and technical and economic indicators in organizing transportation, warehouse and materials handling work, it is possible to compare individual enterprises. But it is difficult to compare the indicators for the sector with the other machine building ministries, as there is no standard intersectorial procedure. As a whole for industry up to now the vocational composition of the transportation and warehouse workers has not been clearly defined.

The research conducted by the Kompleks NPO from the materials of 12 ministries and departments has shown that due to the absence of a standard procedural approach, a varying number of professions is considered in determining the number of employees engaged in materials handling and transportation and warehousing jobs. In the uncounted professions there is a predominance of those jobs performed manually.

For eliminating the designated shortcomings, we feel it advisable to use as a national form the form 1-TS and the instructions to it approved by the Ministry of Tractor and Agricultural Machine Building and which has been long tested (since 1970). It has been approved by the representatives of the Ministry of the Automotive Industry, the Ministry of Machine Tool and Tool Building Industry, the Ministry of Electrical Equipment

Industry, the Ministry of Machine Building for Light and Food Industry and Household Appliances, and certain others.

The pooling of efforts by all the ministries and departments and a uniform procedural approach will contribute to further progress.

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